

# FLORIDA HEALTH NOTES

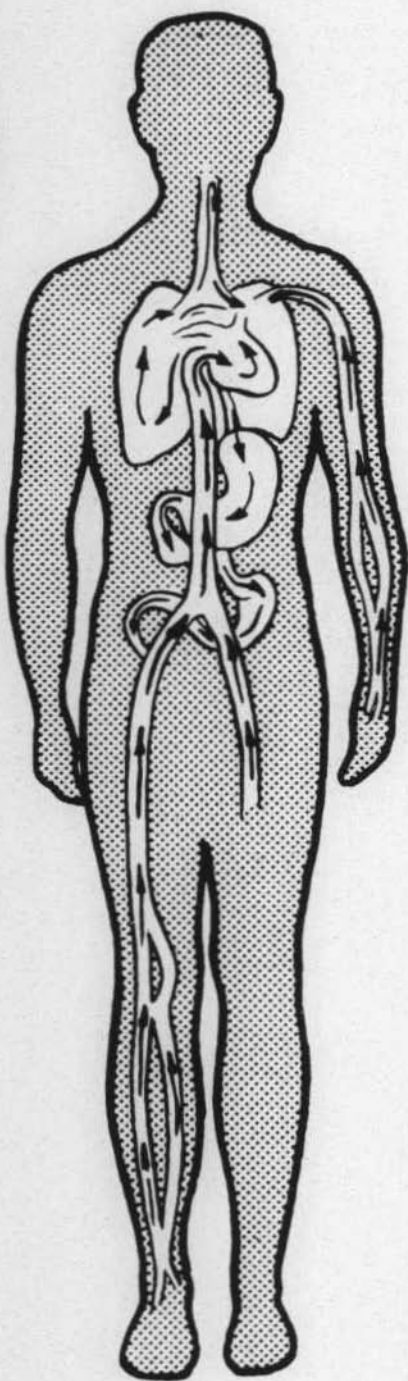
VOLUME 54 — NO. 1

JANUARY, 1962

## INTESTINAL PARASITES

## HOW HOOKWORMS TRAVEL THROUGH THE BODY:

After burrowing through the skin between the toes and into one of the blood vessels, the hookworm travels by the way of the bloodstream, heart and lungs where they break out into the airsacs. From here they go up the windpipe to the throat and are swallowed. They go on to the small intestine where they can live for a year or more unless dislodged by treatment.



# Intestinal Parasites

A familiar scene that frequently takes place in Florida's County Health Departments:

*Mother: (obviously embarrassed) "I took my child to the doctor and he thinks he has (lowers voice) worms! He told me to bring you this specimen to find out what kind."*

*Clerk: "Did you fill out the slip that goes with the container?"*

*Mother: "Yes, I did. You know, I was so embarrassed I didn't know what to do. We haven't lived here too long. Up in New York State, where we came from, we don't have worms."*

The clerk did not smile in amusement. She realized that this mother, new to semi-tropical Florida and some of its problems, was upset by the suggestion that her child might be infected with intestinal parasites — something she had formerly associated with pets rather than children. She didn't know that southern climates are favorable for growing certain kinds of worms — as well as children. But children (and adults) need not have worms, or if they get them need not keep them. There are a few basic facts to learn about worms which all Floridians, old or new, should know. We hope you will find answers to your questions about intestinal parasites in the following pages.

First, let's remember that when we speak of intestinal parasites we are embracing a very wide field. There are literally hundreds of them in many different types and forms. But basically, intestinal parasites may be divided into two general types — worms (helminths) and protozoa. In the first group — the group we are going to primarily concern ourselves with in this issue — are found (among others) hookworms, tapeworms and/or pinworms. In the

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Published monthly except July and August on the 5th of the month by the Florida State Board of Health. Publication office Jacksonville, Florida, headquarters of the State Board of Health. Entered as second class matter, October 27, 1921, at post office, Jacksonville, Florida, Act of August 24, 1912. It is intended primarily for individuals and institutions with an interest in the state health program, public and private. Permission is given to quote any story. Clipping of quotations or excerpts would be appreciated.

second group are found the protozoa responsible for such illnesses as amebic dysentery. All of them are considered parasites and all of them dwell in the intestinal tract of either humans or animals.

Regardless of the fact that Florida has become one of the fastest growing states in the nation, with people and industries pouring across our borders in explosive numbers, our soil and our climate are about the same as they have been for centuries. The sandy soil and warm, humid climate of the state foster the propagation and growth of these parasites which sometimes cause distress in humans. The winters are not long, and there are no sustained periods of sub-freezing weather which would kill many of these parasites. And people in Florida live close to the soil. We grow not only exotic flowers and shrubs but citrus and other fruits. We play a great deal on the beaches and in other recreational areas of our state. All of these areas may harbor eggs or larvae of intestinal parasites. But the greatest areas of infection are wherever there are insanitary conditions — inadequate human and animal waste disposal, insanitary privies, children who use the ground instead of the toilet, and persons of all ages who do not use good personal hygiene.

### Past Performance

The dictionary defines *parasite* as follows: "A plant or animal living in, or on, or with some other living organism at whose expense it is maintained but which, usually, *it does not immediately destroy.*"

Parasites have always existed in the animal life of our planet. There is evidence that eons ago the tiny shellfish of the sea were plagued with even tinier "free riders" which attached themselves both inside and outside their shells, depending for sustenance and protection on their hosts.

Every animal is inhabited by many other smaller forms of life, from micro-organisms by the million to — in some cases — tapeworms many feet in length. Early man had his share of these troubles. The Egyptians spoke of them in their hieroglyphics. For centuries, "worms" have been found in dismembered bodies, but it has only been in the past few decades that medical men have been able to trace the life cycles of these creatures and determine their effects on health. In fact, health authorities think that probably the first public lecture ever given on hookworm was delivered by



# HOW DO YOU FIND OUT IF YOU HAVE HOOKWORM?



**SPECIMEN AND BOTTLE**



**MICROSCOPE**



**HOOKWORM EGGS  
(MAGNIFIED)**

The procedure for finding out whether or not you have hookworm is simple. A stool specimen (bowel movement) is collected in a small container furnished by your County Health Department or your family doctor. This sample is sent to a laboratory. There trained technicians examine the specimen under a microscope to determine the presence or absence of hookworm eggs. If they are found, the report is returned to the County Health Department, or your doctor. They will notify you and advise regarding treatment.

Dr. Hiram Byrd, an assistant to Dr. J. Y. Porter, the state's first health officer, before the Florida Education Association in Gainesville in 1908. Hookworm has been, and still is, the most significant of the intestinal parasites, because of its prevalence and its effect on human victims. In 1910, the State Board of Health did a broad survey and found that 58 per cent of Florida's citizens were infected with hookworm. In 1926 a statewide survey under the sponsorship of the Rockefeller Foundation showed 35 per cent, and in 1953, another smaller sampling revealed 33 per cent infection among children.

No formal survey has been made since that time. However, the 1960 Annual Report of the State Board of Health showed that during that year 117,259 examinations of stool specimens were made for intestinal parasites. This means that Florida physicians and County Health Departments requested such specimens from that many adults and children and sent them to the seven state and regional laboratories for examination. It must be assumed that many additional examinations were made in clinics, hospitals and physicians' offices. The size of the problem may be envisioned to some extent from these figures. Of course, only a portion of the examinations gave a positive response (22,536 revealed some kind of parasites).

Hookworm control was, until quite recently, a *major* program of the state and County Health Departments. Dr. Porter, founder of Florida's public health program, worked vigorously for hookworm control from the time he was appointed in 1889. The diary of one of his assistants reveals that its writer devoted a major portion of his time to this problem.

In the mid-depression years when the WPA was sponsoring many worthwhile projects to make work available to the jobless, the Sanitary Pit Privy Program was undertaken on a large scale, to break down the chain that constitutes the life cycle of the hookworm. It had been known for decades that the spread of human excreta on the ground was the means of passing the infection from one person to another, and indeed could re-infect the same person from whence it came. The WPA working through the Health Departments therefore undertook to assist householders in building sanitary pit privies by providing the labor and plans, and charging only for the materials used. Thousands of such privies were constructed under this program. Even now, at the high school in Jasper, students in the manual arts classes are building sanitary

privies for people in the surrounding areas for only the cost of the materials. They are helping combat the "worm problem" in their county. Today a sanitary pit privy is considered second to a water flush toilet with proper sewage disposal.

### More About Hookworm

Hookworm is probably the best known of all the intestinal parasites (a dubious distinction!) particularly prevalent in the rural counties that stretch across the northern part of the state, but since Floridians travel a lot, it may be found in other sections, also. The way you get hookworm is simple — it comes from excreta of another human who is already infected with these worms. It happens this way: a few people do not have, and more will not use, sanitary toilets. They use the "great outdoors" for a toilet, or else they use insanitary privies which permit the hookworm larvae (immature worm) to get to exposed ground. Those who catch hookworm are usually people who do not wear shoes. The larvae, living on top of the ground, find their way to man's intestines through a most curious journey. They cling to the skin of the foot, crawl in between the toes through the soft skin they find there, burrow a hole through this skin and the tissue until they find a small blood vessel and then are caught up in the blood stream. Carried on this flow they reach the heart and then the lungs where they again start boring tiny holes through the capillaries of the lungs until they reach the windpipe. From here they are coughed up into the throat and are swallowed by the host. Down they go, passing on through the stomach until they reach the intestines where they attach themselves to the intestinal wall, mature and begin sucking blood from their unfortunate victim.

By this time the larvae have grown to adult parasites and are about the size of an eyelash. Even so, examining one of these tiny creatures under the microscope reveals that they have teeth or plates which they use to attach themselves onto the lining of the intestinal wall. There they start to suck blood and lay eggs. *Each adult hookworm will produce about ten thousand eggs in a lifetime of many months.* These eggs are passed from the host in the stool, and unless sanitary toilets are used, someone else, or even the original host, may become infected from this new family of worms.

You would object to your child donating one pint of blood to the blood bank every month — and so would your physician, and the blood bank won't allow it. Yet, a serious hookworm infection

*can drain that much blood from your child every 30 days.* Little wonder that children, and adults, infected with hookworms are often dull, listless, lack energy and may be anemic. No wonder they sometimes have little resistance to bacterial and viral diseases, and their normal rate of growth and optimum good health are affected.

In spite of all the efforts of public health authorities and many others in the communities such as teachers and home demonstration agents, to try to educate people to build and use sanitary facilities and to make sure their children wear shoes, the records show that the number of persons with hookworm has decreased only slightly in the past ten years. However, they tell us that the intensity of the infection of the average person has decreased. There are fewer people so badly infected that they develop "hookworm disease". But there are still far too many who carry enough of the worms within them to make them less capable of learning and earning than they would be if the didn't carry a "worm burden".

### **Stomach Worms (Ascaris)**

In 1960 there were 5200 specimens examined in the State Board of Health Laboratories which were positive for ascaris, sometimes known as roundworms. This particular type of worm is, in some areas, more prevalent than hookworm. The ascaris is a large, pinkish worm about the size of a lead pencil, which sometimes grows to a length of eight to ten inches. One can quickly see that a number of such worms of this size in the intestines of a child can cause serious trouble by blocking the normal bowel functions and by "using" much of the nutritional value of the food the child eats.

Many a parent has been greatly shocked by the sight of one or more of these worms in a child's stool or crawling from his mouth and nose, and due to their size ascaris can sometimes cause more illness than a mild case due to hookworms. Unlike the hookworm, the ascaris does not suck blood from its host. However, it does sometimes cause serious problems by crawling into and blocking the functions of other abdominal organs such as the bile duct, appendix and other such openings into the digestive tract.

The first symptoms are colic, loss of appetite and sleep, tiredness, aches and pains in the stomach region and failure to gain weight properly. Unless discovered early enough the victim may



be so seriously infected that hospitalization and even surgery are needed to correct the situation. In 1960 there were six deaths in Florida attributed to ascaris.

How do children acquire such unpleasant worms? Again we come back to the old problem of poor sanitation and lack of good personal hygiene. Ascaris eggs are deposited on the ground in the stool of an infected person. In 10 days to two weeks they become hatchable. If, near the end of this incubation period, a person gets them in his mouth and swallows them the eggs will hatch in the intestine and grow to adult worms. If a child is infected with ascaris to the extent that there are a dozen or more females in the intestinal tract it can be seen that the stool is litterly saturated with eggs. *The female ascaris produces about 200,000 eggs a day.* Man may acquire stomach worms by the ingestion of "hatchable eggs" in contaminated food or, rarely, in drink. More frequently these eggs reach the mouth directly from the soil via dirty hands.

Obviously, the only answer is to teach our children, and ourselves, to be more careful about our personal hygiene and to insist that frequent washing of hands, particularly after using the toilet and before meals, is observed.

#### **Pinworms (enterobius)**

Pinworms are the most commonly found worms among children. Fortunately, their effect on health is not nearly so severe as that caused by hookworms or ascaris, although a child badly infected with pinworms may be nervous, have restless sleep, irritation or itching around the anus and feel miserable until he receives proper medical attention.

Pinworms are threadlike, whitish worms about a quarter to a half inch long. They live in the large intestine and since they crawl out of the rectum, usually while the victim is asleep at night, they can become quite a source of irritation. The females crawl from the rectum and deposit their eggs on the skin around this body opening. After the eggs are deposited they either disintegrate or crawl back into the rectum and back to the large intestine. Due to the irritation and itching caused by this activity, followed by scratching, the eggs are scattered about the bedclothing, night-clothes and even into the air. In women and girls, the worms may even crawl into the genital organs where they can cause irritation and a discharge.



The eggs may remain in an infective condition for many days, and be scattered throughout the house. Pinworm eggs have been found in the dust of every room of the home in which members of the family were infected. It is easy to see, therefore, how one could get these eggs on their hands or in their food and swallow them, thereby making it possible for them to hatch in the intestinal tract and start the cycle all over again.

Thus we again come to the old story of cleanliness and personal hygiene. If your child complains of itching and irritation around the anus, secure a pinworm slide from your private physician or your County Health Department and proceed as directed. If the results indicate that pinworms are present the doctor will prescribe certain medicines and treatments to correct the situation and will also tell you how to get rid of the eggs. This usually includes frequent washing of bed linens and pajamas or gowns until the infection clears up.

Although your child may practice good health habits his playmates may not, and the transfer from hand to toy to hand to mouth may be made so quickly your child cannot avoid contamination by the eggs from another.

Past experience indicates that usually if one member of the family has pinworms all will have them, including the parents. For this reason it may be desirable for the whole family to be tested.

### **Whipworms (trichuris)**

Though not nearly so common as hookworm and ascaris, the whipworm is found in Florida. In 1960 there were 639 positive specimens found in state laboratories. The whipworm is transmitted from person to person in much the same manner as ascaris. The eggs are passed by the host in bowel movements and, as with the ascaris, ten days to two weeks are required before the eggs become hatchable. Here again, failure to wash the hands after playing is one of the chief methods of transmission. The eggs are passed from the hands of the carrier to an unsuspecting person who inadvertently swallows them. They proceed to the intestines where they hatch into larvae and grow to adulthood. The females lay thousands of eggs which are passed out with the bowel movements. If good sanitary facilities are not available or are not used the soil may become contaminated with eggs which remain hatchable for several months.

"Hatchable" eggs of the whipworm are taken into the intestinal tract through contaminated vegetables, food or occasionally water. However, ingestion of soil by children is the major source of infection.

### Trichinosis

Trichinosis is a serious disease — incurable by medicine and running its course in a few weeks, or occasionally a few months. It cannot be passed from person to person nor from animal to person except in one way — by eating raw or incompletely cooked pork or pork products. It can be prevented by thoroughly cooking pork before eating it. It's just as simple as that.

The tiny parasites which cause this disease, called *trichinae*, live only in animal or human muscles. Hogs get them by eating pork scraps in garbage containing the live trichinae. When humans eat pork raw or partially cooked they swallow the larvae. The stomach contains digestive juices which dissolve the delicate covering which encases each of these worms. The liberated worms then travel down into the intestine where they grow, mate and give birth to living young instead of laying eggs as the hookworm and ascaris do. But this is not the real problem caused by these parasites. The larvae quickly burrow through the lining of the intestinal wall and into the muscles all over the body: the heart, brain, lungs and other organs. The irritation created by this activity causes the victim to be nauseated, and vomiting and diarrhea may occur. After penetrating into the muscles the larva then coils up and encases itself in a covering like the one the parents had when they entered the body.

The female worms may have produced hundreds of larvae, though the parent worms die and are carried away with the contents of the intestines. Meanwhile, the victim is suffering from aches and pain in the muscles, probably attributing them to a dozen other causes with which he has some familiarity. Because they have entered so many different parts of the body the trichinae cause a confusing variety of symptoms. There may be swelling of the genital organs, sore eyes, hemorrhages under the skin, sore throat, difficulty in breathing and, in extreme cases, symptoms of heart disease, delirium or coma. All this can be accompanied by headaches, high fever and prostration.

Fortunately, tests have been developed which aid greatly in making a diagnosis. Medical care is necessary to prevent compli-

cations while the disease runs its course. The death rate from trichinosis is low, and even with severe cases the chance of recovery is good.

There are only two ways to prevent trichinosis. First, legislation has been passed making it against the law to feed hogs uncooked garbage if the meat is intended to be sold in markets. However, there is no law to prevent a farmer from feeding any garbage he chooses to hogs he intends to kill for his own family. Second, be sure to cook all pork and pork products thoroughly before eating them. You might also apply this rule to beef and other products, too, since there are cases on record where a butcher ground up for sausages pork which contained trichinae. After grinding the pork he proceeded to grind beef for hamburger without cleaning his meat grinder. Inadvertently, trichinae from the pork were passed along to the hamburger and, since some people like their hamburger a little on the rare side, the parasites were not killed by cooking and illness resulted. Take no chances on processed meats — cook them well.

### **Tapeworms**

The beef and pork tapeworm is about a half inch wide and some of them have been reported more than 30 feet long. In cows and hogs the tapeworm larvae burrow into the muscles of the host. The larvae are then eaten by humans when they eat meat from these animals. The adult beef and pork tapeworm lives only in humans. It appears to be jointed in segments about a half inch long, each segment of which is capable of breaking off and passing out with the feces, loaded with eggs. The adult worms live in the intestines and absorb a great quantity of the nutritional value of the food the host eats. This makes the host appear to be anemic and listless. Since he retains little of the food value of his meals he is not energetic and sometimes suffers from abdominal pains and nausea.

The dwarf and rat tapeworm is acquired somewhat differently by humans. A certain type of small beetle eats the rat feces containing the tapeworm larvae, swallowing the larvae and containing it within its body. These beetles then get in foods, such as corn meal or oatmeal, and are eaten by humans who may become infected. This is the most prevalent tapeworm in Florida today.

Next comes the dog and cat tapeworm which is sometimes acquired by humans when they "deflea" their pets. The fleas eat the

tapeworm eggs in the feces of the pet. A common practice is to locate the flea and mash it between the fingernails. If the hands are not thoroughly washed after the "defleaing" operation the tapeworm eggs, now hatched to larval stage are mashed on the thumbnails and may enter the mouth and get into the intestinal tract.

Another type of tapeworm is quite rare in Florida though found quite often around the Great Lakes Area and in the Scandinavian countries. It comes from eating smoked, pickled or raw fish. Since most Floridians cook their fish well before eating it this is not a problem here, even though a few cases have been reported from eating fish caught in one large Florida lake.

To avoid tapeworm just be sure that pork, beef and fish are cooked well before eating, and always wash your hands thoroughly after fleaing your animals.

### **Creeping Eruption (vascular larva migrans)**

Dog and cat hookworm larvae cause creeping eruption. It is scientifically known as *vascular larva migrans* — migrating larva. Unlike the human hookworm larva, the larva of the dog and cat hookworm cannot burrow through human skin and enter the blood stream. It tunnels only into the outer layers of the human skin and then turns and burrows its way along, traveling several inches a day, and causing an intolerable itching. The itching causes the victim to scratch, and secondary infection from disease germs may result.

This unhappy and possibly serious condition can occur to anyone — children, plumbers, gardeners, utility and construction workers — anyone who comes into contact with the warm, moist soil where the larvae lurk. Dogs, and cats, pet or stray, cannot be blamed for leaving their waste in these places.

The condition is easily recognized. There will be a small, red, itchy welt running along the skin in an irregular line. This marks the passage of the larvae through the skin. There may be one or several of these welts. They should be treated by a doctor. Home remedies are ineffective and will probably only delay relief. Chances of getting creeping eruption may be greatly lowered by keeping stray animals out of your yard, by cleaning up after your own pets and having them periodically checked by your veterinarian to be sure they do not have hookworms.



## **Amebiasis**

Amebiasis, also known as amebic dysentery, is a disease caused by a tiny parasite acquired by consuming polluted water or food. The condition can be mild, chronic or occasionally acute. Authorities estimate that possibly two to five per cent of the population carry the parasites to some degree.

These tiny amebae, one-celled parasites, need no intermediate host. They live generation after generation in the bowels of the same victim. The body resistance of the host has a lot to do with the severity of the attack. Some people may not get sick even though they might be host to a large number of amebae. They can be few in number and cause trouble. A few more, and they may cause diarrhea, some abdominal soreness, mild fever. Still more may cause a serious illness which is very debilitating. The victim starves while the food he eats rushes through his system in a watery stream almost without digestion.

The amebae are encased in tough little sacs. When swallowed, they emerge from the sacs and become active, living in the intestines. Then they are passed out with the over-active stools, and become a menace to the community. This is because they are not killed by ordinary chlorination methods, and if by chance they get into a water system, can infect unsuspecting people who drink the water.

Amebic dysentery can be passed from person to person, and also in food handled in an insanitary manner. The little parasites can live for a month outside the human body. They can be carried from an insanitary privy or the open soil by flies and other insects. They can seep through the ground from the place of their deposit to the water of a shallow well. The parasites may also be carried on leafy vegetables, particularly if, as in some Asiatic countries, "nightsoil" has been used to fertilize them.

Boiling water kills amebae. Thorough washing of fruits and vegetables is also advisable, if there is any reason to be suspicious of the presence of the amebae.

## **A Public Health Problem**

No statistics have been gathered to tell us the number of school days and work days lost, the number of children whose growth has been stunted, or who have sat listless and wan when they should have been studying, playing and building vigorous bodies.

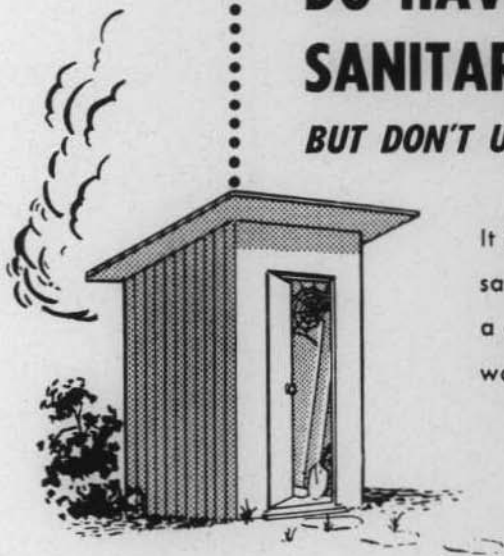


## **SOME FOLKS DON'T HAVE SANITARY TOILETS . . .**



Here is a good example of an unsanitary privy (toilet) which contributes to the spread of hookworm.

## **SOME FOLKS DO HAVE SANITARY TOILETS . . .** ***BUT DON'T USE THEM EVERY TIME!***



It is only when everyone uses a sanitary toilet **at all times** that a community can wipe out hookworm.

The animal parasite diseases we have been talking about are not reported regularly by doctors to the State Board of Health. Moreover, the health conditions the parasites create vary greatly in intensity. The areas where worms create a real public health problem can best be described as usually rural in character, and inhabited in part by people unaccustomed to modern sanitary facilities or to practicing good personal hygiene. The yards are in most cases devoid of grass, exposing the soil to human contact. Sanitary facilities are often not of the approved sanitary pit type, may be in disrepair, and far too often are simply not used, especially in the case of the smaller children. This description also unfortunately applies in some ways to depressed areas in large cities.

The public health nurse who visits a school is often the first person with any medical knowledge who will come into contact with people who have worms, though an alert private physician will also find intestinal parasites in some of his patients. It could be the county sanitarian, or an observant teacher who suspects that a child has worms. In any case efforts are made to get "suspected" people to submit what are called "stool specimens" — small bottles of their own waste matter. The bottles are provided by the County Health Department. At no cost to the patient this sample is then analyzed in one of the seven state laboratories located throughout the state, and if a parasite is found the fact is reported back to the patient's private physician or the County Health Department. Arrangements are then made for the proper type of medicine to be given to the infected person.

But the medicine can do little good unless measures are taken to rid the area of the cause of the disease. It has been found that in most neighborhoods where hookworm — for instance — is found, other types of parasites are also present. This is because the same insanitary conditions which cause infection from one parasite will often help to spread others.

The County Health Department sanitarian may find old, primitive, open-back privies still in use. He will recommend the installation of a toilet and a septic tank, or failing that, a sanitary pit privy. He will recommend the cleaning up of yards, and the elimination of stray dogs and cats.

Teachers are teaching children why they should wear shoes, why they should always use toilet facilities, why they should wash their hands after going to the bathroom, but unless this teaching is

carried over into the home, and believed and practiced there, it will be far less effective.

Others besides the health authorities and teachers are trying to bring home to our citizens the story of worms and other parasites. Home Demonstration Agents, through the 4-H clubs, do a lot of educational work in their contacts with the state's youth.

What can be done for a community when it realizes the rate of infection among the citizens is a high one? First, the county health officer should be contacted for a meeting with those interested in stamping out the problem. He will discuss it with them and plan a program designed to educate the people and also remove the source of the trouble. He might call in his nurse and sanitarian and have them to do a study of the situation in the county regarding the sanitary facilities or lack of them. Their recommendations will then become a part of the overall plan for action in the community. Films and pamphlets may be used to inform the people of the problem and urge them to take individual action to help eradicate the problem. A number of resources are available to help people when they want to help themselves to better health.

Would you like to read more about these parasites? The following pamphlets are available at your County Health Department, or if their supply should be temporarily exhausted you might order them directly from the Division of Health Education, Florida State Board of Health, P. O. Box 210, Jacksonville, Florida. Please specify which ones you want.

#### HUBERT HOOKWORM AND TOMMY

LET'S FIGHT HOOKWORM

ASCARIS

PINWORMS

TAPEWORMS

TRICHINOSIS

AMEBIASIS

CREEPING ERUPTION

STOMACH WORMS

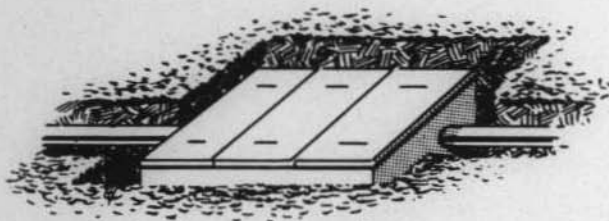
# WHAT KIND OF SANITARY FACILITIES SHOULD WE HAVE?

- ① BE CONNECTED TO A SEWER LINE



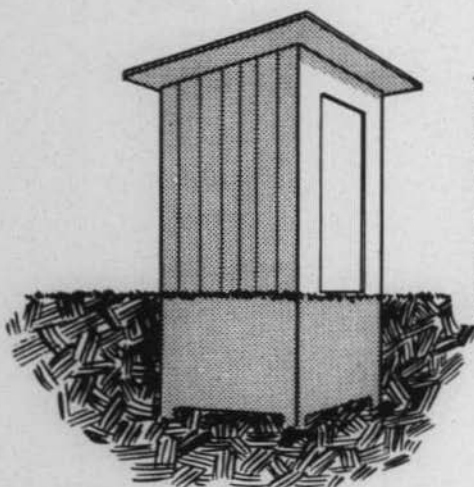
OR

- ② HAVE A SEPTIC TANK



OR

- ③ HAVE A SANITARY PIT PRIVY



The most important single step we can take in preventing the spread of hookworm is to be sure our toilet facilities are sanitary, and that we use them. "Sanitary" doesn't mean merely that the toilet is clean, but that the construction should not permit the stool to be deposited on the ground at surface level.

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J. E. Fulghum, M.D.

## *Bureau of Maternal and Child Health*

L. L. Parks, M.D., M.P.H.

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All counties in Florida have organized County Health Departments

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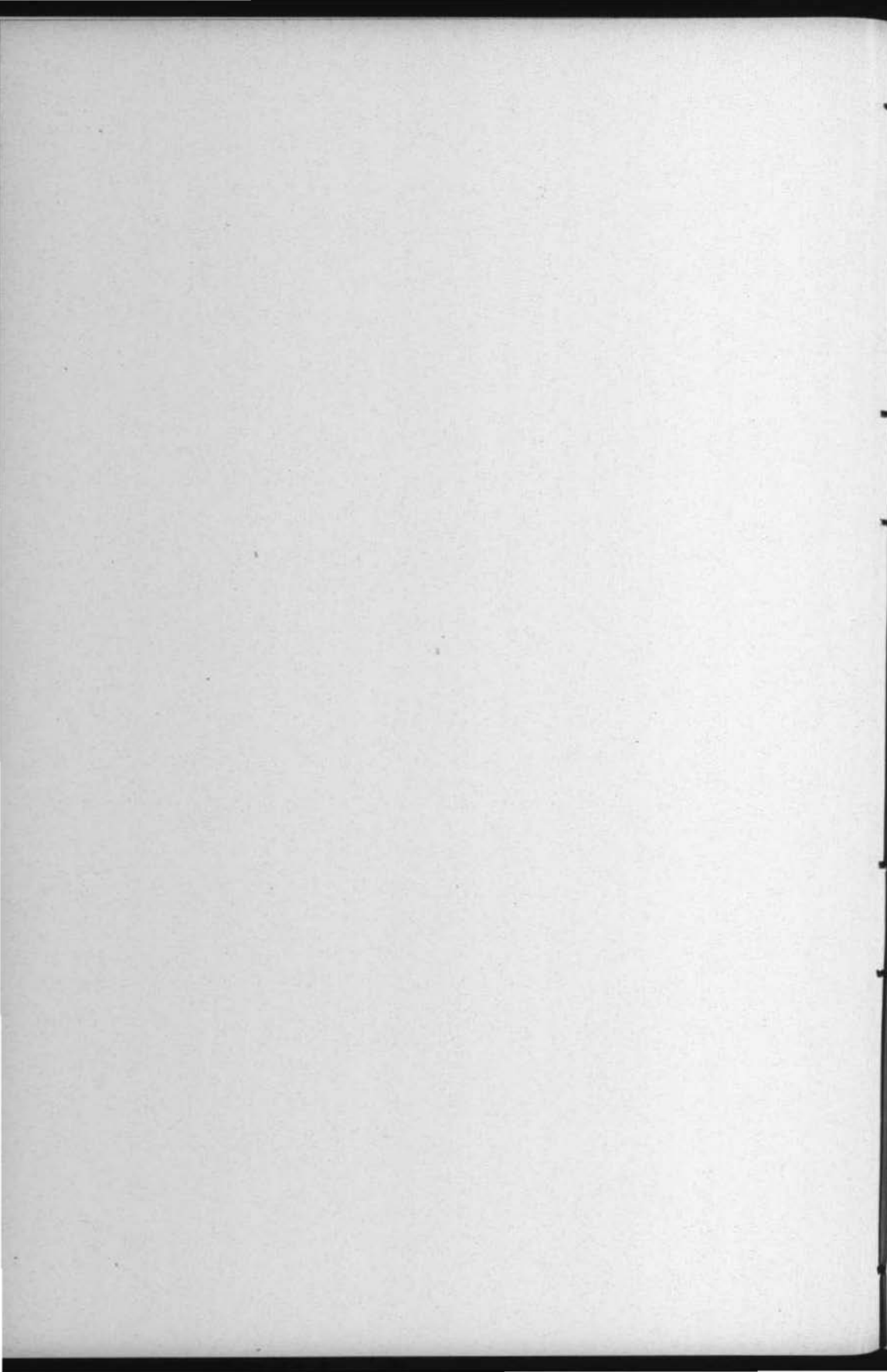
# FLORIDA HEALTH NOTES

VOLUME 54 — NO. 2

FEBRUARY, 1962

**COMMUNITY  
NURSING  
SERVICE**

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# COMMUNITY NURSING SERVICE

All over Florida there are people who need help every day — the help of a nurse who can come into the home and do a simple nursing procedure, and then go on to assist someone else. Here a man of 50 needs to be taught to give himself insulin shots for his diabetes; he's afraid of the needle. There a member of the family of an elderly lady needs to be taught to bathe a person in bed. Down the road is a young girl whose surgical dressing must be changed daily. Next door there's a new mother who needs help in learning to prepare the baby's formula.

There are dozens more — not sick enough to be in a hospital, and not needing — or able to afford — the services of a full-time private duty nurse. Yet they need nursing care and counsel which their families cannot give them.

## The Need

In the larger cities there are the nurses' registries which will refer nurses for private duty. Except in rare instances these nurses prefer to take cases which require a full eight hours of duty for a full eight hours' fee in a modern hospital where modern equipment is available. Essential as this service is, it does not meet the needs of the people we have discussed in the paragraph above.

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### FLORIDA HEALTH NOTES

Published monthly except July and August on the 5th of the month by the Florida State Board of Health. Publication office Jacksonville, Florida, headquarters of the State Board of Health. Entered as second class matter, October 27, 1921, at post office, Jacksonville, Florida, Act of August 24, 1912. It is intended primarily for individuals and institutions with an interest in the state health program, public and private. Permission is given to quote any story. Clipping of quotations or excerpts would be appreciated.

In a number of cities there is also a Visiting Nurse Association, known far and wide as the VNA. The visiting nurse(s) employed by this organization give what is called "bedside nursing care," part-time, for a small fee IF the patient is able to pay. Her association is affiliated with the local Community Chest/United Fund. Her services are available to all who need them, whether they can pay all, or part, or none of the established fee, (which varies from place to place) but is usually only a few dollars a visit.

Regulations wisely require that a visiting nurse may make only one visit to a patient who is not under the care of a doctor. Her organization has a set of "standing orders," prepared by the local medical society, which describe what the nurse may or may not do, on this first visit. For example, a neighbor calls the service and says that an old man next door has a cut on his arm which appears infected. The nurse pays a visit, and finds that this is true. She cleanses the wound, and applies a fresh bandage. But before she can come to this home again a doctor will have to see the man and treat the wound. He will then give the visiting nurse written orders for the future care of the patient if it is found that additional visits are necessary. If the patient cannot afford a private doctor, arrangements can be made for a doctor from a clinic or out-patient department of a hospital to see the patient and issue the orders.

It must be emphasized that the services we are discussing are those commonly needed by the chronically ill, the aged and the convalescent. The services of the visiting nurse are not suggested as a substitute for those of a full-time nurse where these are needed. When a patient is seriously ill hospitalization is best. If under special circumstances the patient remains at home, every effort should be made to provide a professional registered nurse (RN) or licensed practical nurse (LPN), or have a skilled and competent member of the family in attendance. The doctor's judgment should be relied upon for decisions in these matters.

But even the seriously ill, during convalescence, often go through a period in which they have recovered sufficiently so that the intensive and expensive nursing care of a hospital is not essential but they still need expert attention. The visiting nurse fits admirably into this picture. As we have said, she goes from home to home as needed, rendering a vitally needed service in each, and whenever possible teaching a member of the family





**Hundreds of public health nurses visit homes in Florida every day.**



to care for the patient. Or she may visit in a nursing home where the patient is placed while undergoing a long convalescence and give specialized attention to him there. The variety of nursing services she can render in these ways is almost beyond number.

### The Public Health Nurse

Everyone in Florida is more or less familiar with the work of the county public health nurse. In her dark blue or light gray uniform with the "overseas" cap, she is a familiar figure as she scurries about from clinic to school, from a demonstration visit in a home where she shows a mother how to bathe a baby to another where she talks with the family of a patient discharged from a mental hospital. For decades she has been a major link between public health departments and the general public.

She and her hard-working sisters are employed in the County Health Departments of every one of our 67 counties in Florida, where their job is *primarily* to teach and demonstrate good health practices, and to assist in the operation of health department clinics. But because of the size of the districts they each cover, and the multitude of their duties, they are not able to give individual bedside nursing care, except occasionally for demonstration purposes. For instance, one public health nurse told of having been asked by the welfare department to visit a home where an old man had returned from the hospital after treatment for a stroke. She found the home adequate and the man's daughter able to care for the ordinary needs of an aged convalescent. But the man had lost most of the power in his left arm and leg, and was deeply despondent. He needed professional help over a long period of time in learning to make the most of the abilities he still retained. But the nurse had so many other duties she could not see the patient frequently — and there was no visiting nurse service in the community.

And so we have two kinds of nurses making home visits in these larger communities. The county's public health nurses at the health departments and the visiting nurses at the VNA both have vital duties to perform. But in the smaller towns and rural areas there is not enough work to keep a visiting nurse busy, and the many services she might give to ill persons are left undone, or are attempted by unqualified and untrained people.



**This little girl was struck by a car. Now that she is out of the hospital the public health nurse is visiting her to carry out her doctor's orders. The nurse is also teaching the mother to care for the child between visits.**



Weighing twins (who are coming along nicely) is just one of the many things a visiting nurse finds to do in her work with the community nursing service.

This void — the lack of *bedside nursing care* in the smaller communities has not gone unnoticed by public health authorities, doctors and community leaders. For several years now small experimental programs have been in operation in several Florida counties to determine whether it is practical to combine the services of the public health nurse and the visiting nurse in one organization.

### **The Answer**

The *combination service* is the answer. That is the conviction of top administrators of the Florida public health program — the State Board of Health — and the officials who administer the aid-to-state programs from the U.S. Department of Health, Education, and Welfare.

Here is what they found.

In the largest cities in Florida and other states the local health departments' public health nurses and the VNA's nurses have worked side by side for years, each rendering an invaluable service. In the very nature of things there are many overlapping visits, the PHN and the VN each having occasion to visit the same patient. (In some instances workers from public and private welfare agencies and from voluntary health associations also see the same patient. In most of these situations an informal system of cross-referral helps cut down the duplication of effort.)

In the smaller community there is no VNA, for neither the patients nor the local Community Chest could afford to pay a visiting nurse's salary. On the other hand, if a visiting nurse were employed to cover a big enough area (perhaps comprising several counties) so as to make the number of weekly visits practical, the territory would be so large that the time she wasted in travel and car expenses would be exorbitant.

**This tiny baby was not taking nourishment properly, and the doctor gave instructions for the nurse to visit with the mother and help her work out the proper diet and method of feeding.**





It seems quite natural then that there would develop the idea of *combining the services* of the two kinds of nurses into a total nursing program for the small community. Each nurse would do *all* of the things a public health nurse ordinarily does, and *all* of the things a visiting nurse does, as needed, and would be assigned a smaller geographical territory and population group to serve. Experience has shown that where public health nurses are usually employed on a basis of one for every five thousand population, the nurses handling a total program should be in a ratio of about one to three thousand.

The main advantage of this combination of services is that it provides the badly needed bedside nursing care that has been missing in the small community. But there are other advantages. In areas where the two services at first existed independently, and then combined, it was found that there was a considerable saving of time, money and confusion. From the patient's point of view, the confusion was lessened because he dealt with only one nurse instead of two. From the point of view of the public health officials and the voluntary agency which operated the VNA, there was a saving of office space, administration expense, travel and other costs caused by duplication of effort.

### **Full Circle**

The idea of combining the services of the public health nurse and the visiting nurse is not new. It is more like a return to the "good old days."

In the very beginning of modern nursing such women as Florence Nightingale and Clara Barton had no idea of selecting one nurse to teach and demonstrate, and another to care for the sick. To them it was clearly all one job. But then life for nurses — as for everyone else — became more complex. There was so much for the public health nurse from the official agency to do, including visiting the schools and helping with the public clinics, that there literally was not time for her to stop and care for an individual much as she must have wanted to when she saw how great was the need. In fact, public health nurses in Florida deserve a great deal of the credit for promoting the establishment of the community combination service.

For example, we might have a school located three miles from the nursing headquarters and which is reached through heavily-traveled streets. Next to the school is a home where a sick child needs to be checked every day for a week. Several blocks away a diabetic grandmother needs insulin injections, and a member of the family must be taught to give them. Without the community nursing service, both the public health nurse and the visiting nurse would have to make that six mile round trip, taking about half an hour of travel time, to make a regular call at the school and see the two patients. With the combined service one nurse can do it all in a single trip.

### **The Combination Service**

The organization of such a program requires the solving of a number of problems. For one thing, it is not possible simply to add an extra nurse or so to the County Health Department staff and say that from now on the nurses will render bedside

**A nurse consultant from the State Board of Health talks over problems of the community nursing service with two of a county's public health nurses.**





**The Loan Closet is a very important part of the community Nursing Program. It is stocked with sick room supplies and appliances, such as crutches, wheel chairs, hospital beds, bed pans, and other essentials, donated by generous individuals and businesses, and cared for by the Council members.**

care for a fee. State law does not permit the County Health Department to collect fees for nursing services. Besides, it is not in the American tradition to render such personal and individual services at the taxpayers' expense if a person can afford to pay. There is also a sound psychological reason for making the nursing service a direct responsibility of the people of the community. It is a well known fact that people respond best to, and support most vigorously, a program which they operate themselves rather than something which is laid in their laps by a faraway governmental agency.

Therefore, the establishment of a community nursing service requires the formation of a community voluntary association, composed of citizens of the immediate area to be served, and responsible to that community. The association must be incorporated to help insure stability, and to enable it to properly handle the funds that are collected by the nurses from the patients or their families and received from the Community Chest and other agencies. This organization is usually called the *Advisory Council*, comprised of from 15 to 25 interested citizens, with the usual slate of executive officers, and a medical advisory committee from the local medical society. The County Health Department director is designated medical director and the supervisor or senior nurse of the county staff is the nursing director.

### How It Starts

In August 1957, the State Board of Health offered to help set up demonstration Community Nursing Services (combined service) programs in a number of small counties. The counties had to meet certain qualifications and agree to certain procedures which will be explained. When this was accomplished, the state would pay the salary of one additional public health nurse to be added to the county staff for two years, after which the county program would have to become self-supporting.

Before this could be done, the full-rounded approval and support of the community would have to be obtained. This means that the local medical society and the individual practicing physicians would have to understand the program, agree to it and want to use it. The county government — the commissioners — would have to add their support, for they are responsible for the public tax portion of the program's support. The personnel

## AND THE WHO

Florida has launched a statewide pioneering movement to make nursing care available to any home — particularly rural — within its borders.

Dr. Albert V. Hardy, Acting State Health Officer, said that a survey of 26 north-central counties showed an urgent need for what is known as combined home nursing service and that the Board would use funds it already has to go with a grant from the Public Health Service to offer the service to the whole of Florida. The grant is to employ additional nurses in County Health Departments.

Combined home nursing service was designed to save money and womanpower. It was given impetus in Florida by Miss Ruth Mettinger, Director of the Board's Division of Public Health Nursing and who organized Florida's first Visiting Nurse Association.

Combined home nursing service is denied no one, regardless of race, creed or ability to pay. The nurses work eight hours a day, Monday through Friday, except in emergency but are not on call at night. The service is free to the indigent. Those able to pay are charged on a sliding scale, the money going into a county's Citizen's Advisory Committee fund for expansion of the service within that county.

Under the plan, public health nurses go into a home to teach prevention and cure of diseases; teach someone to take care of a patient by giving bed baths and changing surgical dressings; give hypodermic injections and special maternity and newborn care; check sanitation of premises; and help with rehabilitation. They do not give care unless it is ordered by a physician. The service is designed to relieve hospitals in critical bed-space areas, serving patients when



# NOW— LE STATE

home care is possible but which otherwise might demand hospitalization.

The 26 counties surveyed are bounded by and including Jefferson in the Panhandle and in the south by and including Pasco, Sumter, Lake, Seminole and Flagler but excluding Duval. The area comprises 32.1 per cent of the state's area. It contains 536,743 persons or 10.8 per cent of the state's population and only 7.3 per cent of the licensed physicians under 65. And since 111 of the area's 337 physicians are in Alachua where the University of Florida Medical School is located, the average physician in the remaining 25 counties cares for 2047 persons compared with 1078 for the state as a whole.

Five of the counties have no hospitals and 12 no licensed nursing homes. Of the 2006 hospital beds in the area, 498 are in Alachua. In the remainder of the area, there is one bed for each 307 population. Of the 762 nursing home beds — one for each 704 persons — 83 are available to nonwhites. The per capita effective buying income ranges from \$812 to \$1,458 annually compared with \$1,740 for Florida and \$1,974 for the United States.

Dr. W. L. Wright, director of the Bureau of Local Health Services, said "Public health programs for control of chronic diseases evolve slowly in the rural areas and it is evident that many who need nursing services never receive them because of scarcity and cost of hospital and nursing home beds. In rural areas, it is economically and administratively impractical to develop independent Visiting Nurse Associations. The combined service offers the least costly and the only practical means of providing home nursing care."

of the County Health Department — the directors, nurses and others — would have to be thoroughly sold on the idea. But that is not all. The local chapters of the larger voluntary health agencies like the Cancer Society and the Tuberculosis and Health Association, would have to favor the plan, for part of its support would come from contracts with such organizations to render nursing service to their clients. Similarly, persons receiving medical aid under the Veterans Administration, the Vocational Rehabilitation Service and the Florida Council for the Blind may occasionally require home nursing care, and contracts for this service have to be signed after the Council becomes incorporated. And, of course, the public as a whole would have to be wholeheartedly behind it, because in the end they would be its "owners," through taxes and contributions of money and effort. Public

### **Where We Stand Today**

There are at present 12 community nursing service programs operating in Florida, not including the independent VNA services in four of our largest cities. (See list on last pages of this issue.) One of these services has been operating for less than a year, and its figures are not included in the report below. Approximately two million people, or about 40 per cent of the state's population live in areas now covered by the 11 programs reporting. During the fiscal year recently concluded the nurses from these programs made 70,001 visits to patients to render bedside nursing care. On 32,925 of these occasions they did not charge a fee. On 37,176 visits they collected fees totalling \$90,819.75, or an average of \$2.44 per visit. In some instances these figures include monies received from contractual services rendered to clients of the State Department or Public Welfare, Council for the Blind, Vocational Rehabilitation Service, etc., but contributions from the United Fund/Community Chest, or other large donations, are not included. State Board of Health officials feel that these figures reflect not only a gratifying growth of the program during recent years, but indicate that the service is being accepted by the public, that further expansion is justified, and that the idea is completely worthwhile and thoroughly practical.



This man was accustomed to hard work out of doors. Now, after his stroke, he works with a pulley and a weight to regain the strength of his left arm. The nurse "invented" and installed the pulley and weight.



Here a public health nurse checks a student's teeth while a volunteer mother (below) operates the eye testing machine. If a condition is found which needs correction a note is sent home to the parents.



understanding and enthusiasm for the program are the primary factors in its success. Experience has shown that in the beginning more calls for the help of these nurses are received from neighbors, relatives and social workers than from physicians.

The personal service of the nurse is the major item of cost to be considered, but it is not the only one. There are incidental costs like printed forms, and perhaps telephone answering service but the medical supplies, (NOT including medicines prescribed by the doctor for the patient, and the items in the Loan Closet) are very important, and are the responsibility of the Council members.

The Loan Closet — not a new idea at all, but an old American tradition in isolated communities — is just what the name implies. It is a small storage room in which are kept such things as sickroom supplies, bed linens, pillows, wheel chairs, crutches, heating pads and the dozens of things that families need temporarily and often cannot afford or do not care to purchase.

**The doctor has prescribed injections for this gentleman, and the nurse will give them the first few times, until a member of the family learns how to do it.**





Families who could afford to buy such an item as a bedside commode or bedpan often find it far more practical to borrow it from the Loan Closet than to buy a new one and then have to store or dispose of it after the emergency is over. These items are usually donated, new or used, by business firms and individuals in the community and are loaned when and where needed. Records are kept, and the items are expected to be returned in good condition. A committee of Council members takes the responsibility for managing the Loan Closet. This same committee may be also responsible for providing bandages and other incidentals.

Definitely one of the most important functions of the Advisory Council is that of creating and maintaining good public relations. The whole plan would fall to pieces if the public did not know about the bedside nursing service, trust it, want it and use it when needed. Usually the Council has a committee which has formal charge of "publicity," but in the larger sense the whole Council must be aware of its needs for good relations with the community, and work on it all the time.

Another committee often found within the Council handles the transportation of persons who need a service which cannot be given at home, and must be rendered at a hospital or clinic. Members of this committee see that such a person is taken to the clinic or hospital in a car or ambulance as needed.

### **Financing**

The availability of federal money to expand the community nursing program into many more counties in the state does not change the local financing of the program, nor lessen local responsibility for its success. Federal-state financing assures the payment of the salary of at least one nurse, but the Council is still responsible for collecting such fees as it can, and for depositing these and such contributions as it may receive in its bank account, paying its own bills and turning over to the County Health Department as much of its funds as it can, or as local arrangements may call for. There is a considerable amount of flexibility leaving many questions which must be decided at the local level, which is the way most Florida communities like to conduct their affairs.

### **Advantages**

Experience in the counties where the combined public health and visiting nurse services have been in operation for several years has shown these advantages:

- \* Professional part-time home nursing care for those who formerly had to rely on an untrained relative or servant or friends.
- \* Shorter and therefore less expensive hospital stays for those who are on the way to complete recovery and can be cared for at home, or in a nursing home.
- \* More comfort for the chronically ill, aged or infirm.
- \* Less worry for the doctor who knows his patient is receiving proper attention.
- \* Greater satisfaction for the nurse who is able to make use of ALL her professional skills.
- \* More cooperation with those responsible for helping people being cared for by voluntary and official health agencies.
- \* More efficient follow-up of persons found to be positive reactors in mass health check-up campaigns, such as blood tests, chest X-rays, etc.
- \* Less confusion for the patient or his family when they only have to deal with one nurse visiting the home.
- \* Better follow-up of children found in school surveys to have a physical or emotional condition that needs attention.
- \* A better community health education program when the nurse may teach health habits and care for the sick in in one visit, as well as demonstrating how such care can be given by someone in the home.
- \* Reassurance of the patient that a professional nurse is giving or supervising his care.



With help from the visiting nurse and a walker from the Loan Closet this woman learns how to get around on her injured foot.

### Is YOUR Community Ready?

The State Board of Health's Division of Public Health Nursing has laid down these "Criteria for Communities that Might Undertake a *Nursing Care of the Sick Program*":

1. The community is ready to support the program, and can be expected to take over increasing responsibility for its cost.
2. Enough personnel, nurses and others, can be employed to render the needed services.
3. Professional acceptance is assured; medical society, physicians in private practice, and personnel in hospitals, clinics, health agencies and other affected agencies are in accord.
4. The organizational structure — the incorporated council — is such that an effective program can be expected.
5. The proposed program is based on community needs, is realistic in terms of objectives, and has as its ultimate goal the offering of effective nursing service to the community as a whole.

A clean, fresh bed on the living room couch makes this sick little girl feel better while the visiting nurse checks her pulse.



The public health nurse's face beamed as she told this story of community action sparked by the local community nursing services activities.

An old woman was dying of an incurable cancer. She lived alone and had no relatives or close friends. A social worker reported her condition to the community nursing service. The nurse made her first visit and found the woman's condition deplorable. A doctor volunteered his services and gave orders for care of the patient. The nurse made daily visits, giving baths, medications and the tender care the old woman needed so much. Needed items for the sickroom were obtained from the Loan Closet. But the community was not satisfied. The ladies of the community took over the house-keeping in shifts, so that there were two on hand all day, and one all night. The house was clean, there was good warm food. There were electric lights and a television set, friendly voices and a reassuring presence when things became a little frightening for a lonely old lady. A few weeks later she passed on in dignity, leaving a warm, friendly world she might not have known at all, if the activities of the established community nursing service had not brought her plight to the attention of warm-hearted citizens.

**This old lady is bed-ridden, and one of the highlights of her life is the visit of the nurse who bathes and makes her comfortable.**





Bedside nursing care as described in this issue of Health Notes is available in Florida through the following organizations:

#### **JEFFERSON COUNTY**

Jefferson County Health  
Department  
545 North Jefferson St.  
Monticello, Florida  
Phone WY 7-1422

#### **BAKER COUNTY**

Baker County Health  
Department  
Macclenny, Florida  
Phone AL 9-3291

#### **CLAY COUNTY**

Clay County Health  
Department  
Green Cove Springs, Florida  
Phone 6611

#### **PALM BEACH COUNTY**

##### **Glades Area**

Pahokee, Belle Glade and  
Canal Point  
Community Nursing Service  
Belle Glade, Florida  
Phone WY 6-5219

##### **Southeast Area**

Delray Beach, Lantana,  
Boynton Beach, Boca Raton  
Southeast Palm Beach  
County Home Nursing  
Service, Inc.  
Delray Beach, Florida  
Phone 278-3213

#### **POLK COUNTY**

##### **Haines City Area**

Northeast Polk County  
Community Nursing  
Service  
Haines City, Florida  
Phone HA 2-3551

#### **HILLSBOROUGH COUNTY**

##### **Plant City Area**

Hillsborough County Health  
Department  
Plant City, Florida  
Phone 752-5105

##### **Tampa Area**

Greater Tampa VNA  
1420 Tampa Street  
Tampa 2, Florida  
Phone 2-0621

#### **VOLUSIA COUNTY**

##### **Halifax Area**

VNA of Daytona Beach  
440 South Beach Street  
Daytona Beach, Florida  
Phone CL 2-0471

##### **West Volusia County Area**

Volusia County Health  
Department  
DeLand, Florida  
Phone RE 4-1349

Continued on next page —

**SARASOTA COUNTY**

VNA of Sarasota  
Sarasota, Florida  
Phone 955-8101

**ESCAMBIA COUNTY**

Pensacola VNA  
2251 N. Palafox Street  
Pensacola, Florida  
Phone HE 8-8571

**PINELLAS COUNTY****St. Petersburg Area**

VNA of St. Petersburg  
520 Second Avenue  
St. Petersburg, Florida  
Phone 7-1103

**Clearwater Area**

VNA of Clearwater  
1180 E. Cleveland Street  
Clearwater, Florida  
Phone 442-6151

**DADE COUNTY**

VNA of Dade County  
1350 N.W. 14th Street  
Miami 35, Florida  
Phone FR 7-3601

Independent Visiting Nurse Associations are giving bedside nursing service in the following counties:

**DUVAL COUNTY**

VNA of Duval County  
2105 Jefferson Street  
Jacksonville, Florida  
Phone EL 6-6355

**ORANGE COUNTY**

VNA of Orange County  
1221 N. Orange Avenue  
Orlando, Florida  
Phone GA 3-9686

**PALM BEACH COUNTY**

VNA of Palm Beach,  
West Palm Beach  
and Lake Worth  
3222 S. Poinsettia Avenue  
West Palm Beach, Florida  
Phone TE 3-0328

**BROWARD COUNTY**

Broward County VNA  
1300 S. Andrews Avenue  
Phone JA 3-9897

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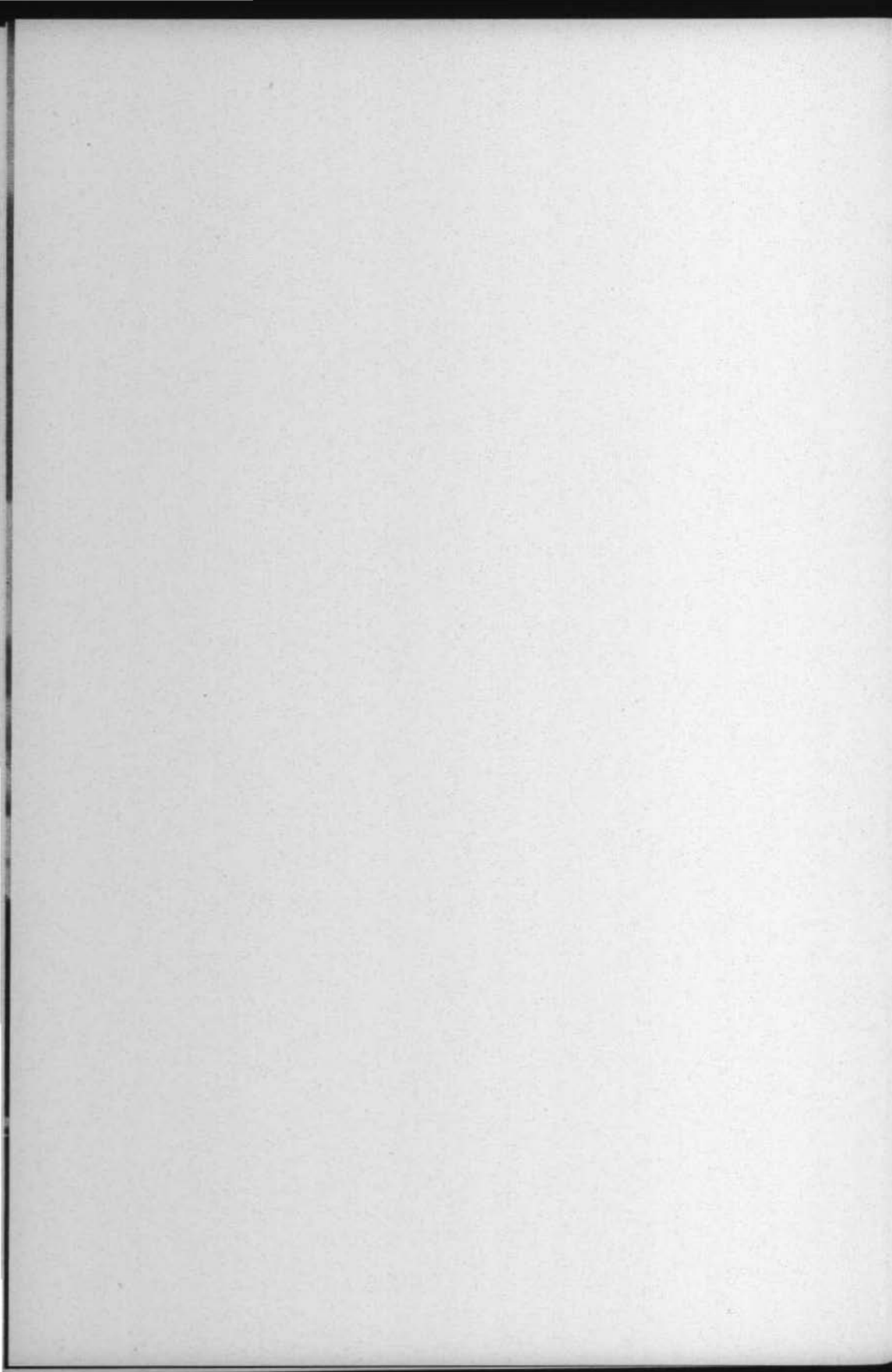
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# CIVIL DEFENSE

Probably one of the chief topics of the day is that of survival in event of civil disaster or nuclear attack. The newspapers, radio, television and other mass media are constantly reminding us that we must overcome our apathy and prepare for such disasters if and when they come. The Office of Civil Defense has printed many different booklets and information pamphlets telling people how to prepare for such an event. The most popular discussion today centers around plans for family and community shelters. We in the health field are concerned (among other things) with first aid supplies which should be kept in these shelters. The federal government is spending money to provide the necessities of life with which to stock community shelters. Supermarkets are now stocking as regular sales items concentrated foods which could sustain life.

In Florida, with its many military bases and space age

activities, officials are perhaps more keenly aware of possible threats to our health and safety. All personnel employed by the Florida State Board of Health have recently completed a civil defense survival course, following the example of the Governor and his cabinet, and employees of the 67 County Health Departments are doing likewise.

Yes, our state is aware that in this age of intercontinental ballistic missiles *it could happen to us.*

The many forces of the nation are being mobilized to act swiftly in event of national disaster so the loss of life may be kept at a minimum. Since the health of people in a disaster area is of such great importance the State Board of Health and the County Health Departments are charged with the responsibility of advising people how to meet health problems which will be encountered in the event of disaster, and of mobilizing the

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## FLORIDA HEALTH NOTES

Published monthly except July and August on the 5th of the month by the Florida State Board of Health. Publication office Jacksonville, Florida, headquarters of the State Board of Health. Entered as second class matter, October 27, 1921, at post office, Jacksonville, Florida Act of August 24, 1912. It is intended primarily for individuals and institutions with an interest in the state health program, public and private. Permission is given to quote any story. Clipping of quotations or excerpts would be appreciated.

health forces and doing everything possible to see that the health of the survivors is not threatened by sickness and disease.

### Consider . . .

Several years ago, when the warning time was calculated in hours rather than minutes, civil defense plans called for evacuation of people from known target locations. Systems of streets and roads to be used for evacuation of major cities and military areas were carefully surveyed and maps to be used for orderly evacuation were prepared and distributed. Today, with an estimated twenty minutes warning time the federal government has abandoned plans for evacuation and no longer advocates this action. Instead, buildings in a possible target area are being surveyed with an eye to providing community shelters for those who do not have or cannot reach family shelters. Such shelters will not provide much protection in event they are located on "target zero," or directly under the blast area of the missile. But if they should escape the blast these shelters may be home for those who seek refuge in them for a period of weeks or more.

By the end of 1962 the federal government hopes to have

enough of these shelters located and stocked ready for occupancy to care for the people of the area. Shelter managers will be appointed and trained by the local civil defense organizations. Citizens will be notified of a specific shelter to which they are supposed to report when the warning comes. Authorities hope to be able to have sufficient drills so that people will accustom themselves to reporting to the proper shelter if and when the time comes.

Much has been written and talked about concerning fallout and fallout patterns. We hear about radiation sickness. Teams have been organized to move swiftly to protect life as much as possible if and when an attack might come. One of these teams is that of the health personnel in the state. It is with their job that this issue of *Florida Health Notes* is primarily concerned.

What will be some of the problems faced by you and *your* health authorities in event of a nuclear attack? Who will these people be and where will they be located? How will they go about performing the many tasks necessary to prevent spread of diseases and provide pure food and water as well as help care for the sick and injured?

## Water

Paradoxically, one of our cheapest and most abundant necessities might present one of the biggest health problems - water. For so many years the public has been taking pure water for granted, thanks to the ceaseless work on the part of public health officials to assure them of pure water supplies, and knowledge of possible dangers if unsafe water supplies are used. But in the event of a disaster a number of things must be taken into consideration. Most water furnished by municipal water systems is dependent upon huge pumps powered by electricity. But electricity may be unavailable due to destruction of power plants. Water from wells known to provide pure water may not be available, even in private homes, for they too, are powered by electricity. An attack might rupture sewage and waste disposal systems which, in turn, would pollute the drinking waters and natural bodies of water.

In event of a nuclear attack another health problem would be that of the pollution of water supplies by radioactive materials.

People must understand that before any water, coming from a questionable source, is used it must be thoroughly boiled for at

least five minutes. This will kill disease germs due to pollution *but it will not destroy radioactivity*. And you cannot tell if your water is radioactive unless you have instruments with which to check it.

When Hurricane Donna struck at the Florida coast in September of 1960 it gave us a preview of future problems of a similar nature. From cities outside the disaster area milk producers quickly switched their milk packaging machines over to pure water and thousands of cartons were filled and sealed. These were then shipped into the disaster area where they filled a crying need.

In the event of any kind of a disaster the sanitarians from the State Board of Health and the County Health Departments are on the job as quickly as possible, checking on water supplies and arranging for waste disposal.

## Food

The next important item will be food. One would think this problem would solve itself, with the many supermarkets, grocery and meat stores and the warehouses we have in Florida. But it is not that simple. To begin with, almost all of these places need chilling or freezing rooms to keep some of their foods fit to eat. With electricity off the temperatures will slowly rise

in the freezers and foods in them will subsequently spoil. Here again your sanitarians will move into disaster areas and check on foods in warehouses and cold storage plants before allowing them to be used.

One must always keep in mind an important fact: if you have a home freezer and the current goes off and stays off long enough for the foods to become unfrozen, *the foods must not be re-frozen*, except in extreme emergencies where even food will be so precious that nutritional value must be considered before taste. Normally, refreezing will destroy the quality of the foods and make them unpalatable. And don't forget, your home freezer may have been covered by radioactive fallout. If you have reason to suspect this, the outside must be washed off before it is opened. Foods which have not been subjected to temperatures much higher than the freezing point of water (32°) may be safely eaten but should not be re-frozen.

Most likely, our civil defense authorities will commandeer

buildings or other shelter areas which are safe to be used and will establish food and water depots.

But food, water and shelter are not the only health problems involved. There are a myriad of other health conditions which might possibly arise and where the health authorities will have to be constantly on the alert to protect the lives and welfare of the survivors.

### **The Injured**

There will be an unknown number of injured. Debris from the attack, either falling or lying about on the ground, will hurt some people. Others will suffer injury from hundreds of different kinds of small accidents incident to evacuating or moving to safe areas. With this potential ever in mind several things have been done to prepare for these contingencies. First, a plan called "Medical Self-Help" is being started by the federal government. It is hoped that it will be in full swing by the end of 1962. This plan consists of encouraging at least one member of each family to enroll and attend classes

MEDICAL SELF-HELP anticipates having 12,500 people trained by June of this year and 1,600,000 trained by one year from now. It is intended to give first aid training to at least one member of each family. Find out when your classes will be held and then attend regularly.



in first aid training. Directions for preparing a small kit containing a limited supply of easily acquired and inexpensive first aid materials will be given each person attending the classes and the public will be urged to have such a kit available in the home at all times.

But after first aid has been administered to an injured person they sometimes need the attention of a doctor, even hospitalization if the injury is serious enough. In cases such as this the doctors will quickly mobilize and the federal government has made available, at strategic points about the states, mobile hospital units packed primarily in boxes, which can be quickly moved into a disaster area and set up in an auditorium, a school or any public place where there is sufficient room. These boxes contain all the essentials for an emergency hospital. The center spread in this publication shows one way such a hospital can be set up and put into operation.

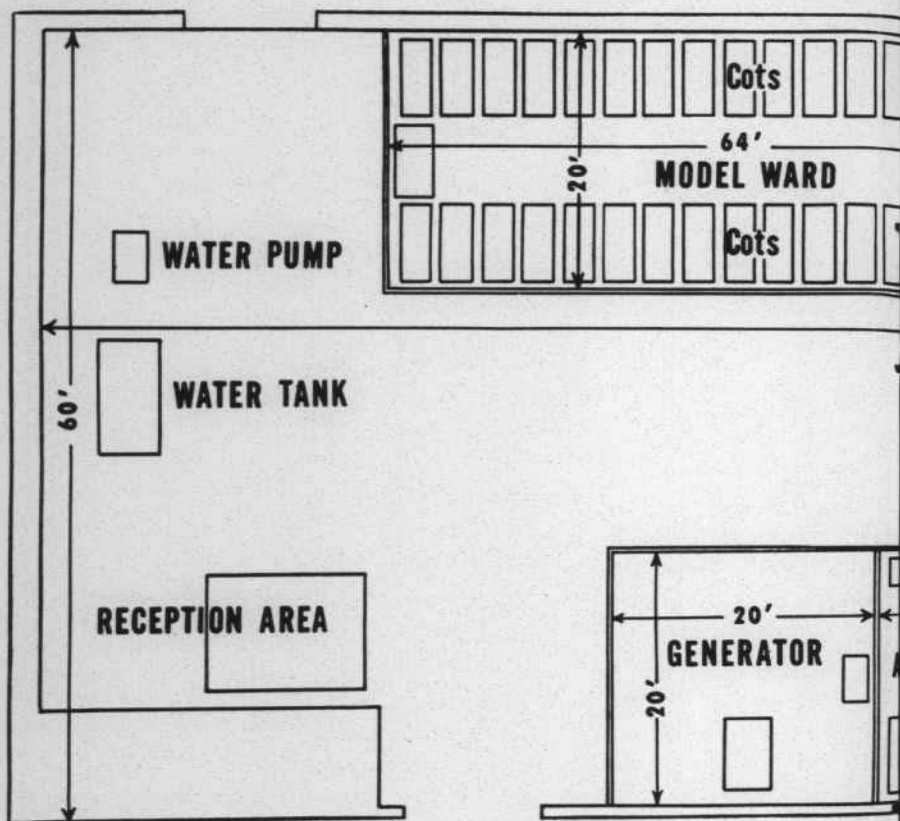
Florida presently has 35 of these hospital units. These are located in Brevard County (2), Indian River County, Lake County (2), Marion County, Orange County (2), Citrus County, Manatee County, Pasco County, Pinellas County (3), Polk County (2), Sarasota

County, Alachua County, Clay County (2), Duval County, Levy County, Nassau County, Collier County, Dade County, Highlands County, Lee County, Martin County, Monroe County, Okeechobee County, Palm Beach County, St. Lucie County, Escambia County, Jackson County, Okaloosa County.

These prepositioned hospitals will have full facilities to care for any type of injury or illness. There will be a complete pharmacy for compounding or supplying drugs needed by physicians. X-ray facilities are there if needed. There will be a complete operating room, and 200 beds for patients. The prepositioned hospitals are not intended to replace available hospital facilities but they will serve to fill the gap when other facilities are either destroyed or overflowing with patients. They will serve best if a major city is attacked and the survivors must be evacuated to rural areas where doctors and hospitals are at a premium.

Although the prepositioned hospitals are under the supervision of the State Health Officer they are federal property and may not be used without express permission or order of the President. Once an area has been declared a disaster area by the President the health

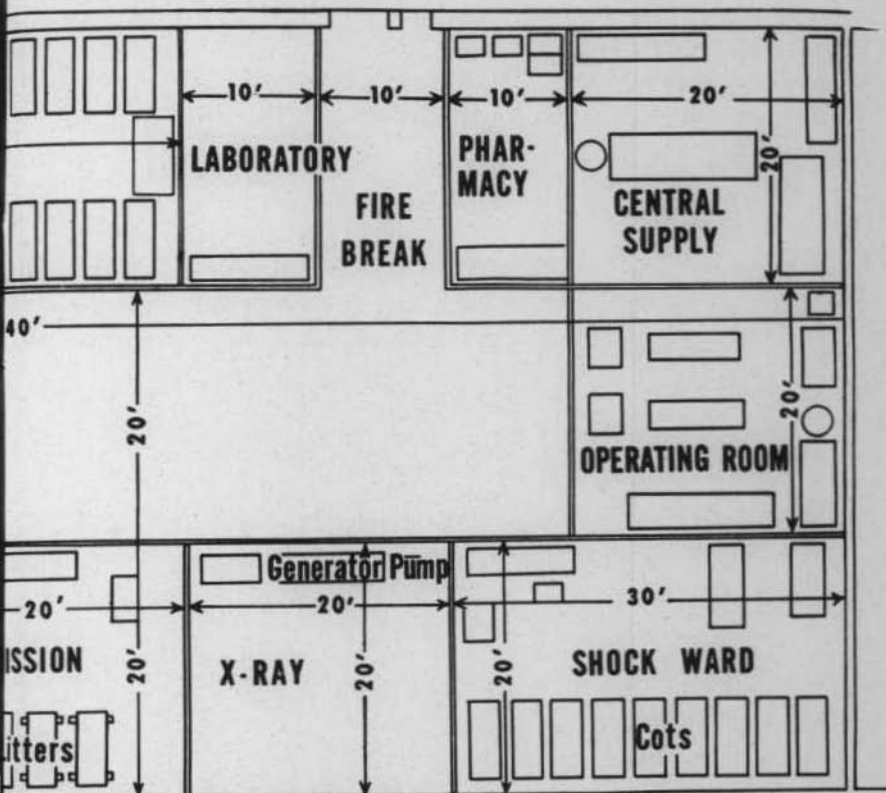
## THE PRE-POSITIONED



**CIVIL DEFENSE  
HOSPITAL**

There are 35 of these emergency hospitals located in strategic points about the state. They are carefully crated and stored against the day they may be needed. These hospitals may be loaded on trucks or on railroad cars and moved quickly where needed. Although under the supervision of the state health authorities, they are the property of the federal government and may not be used unless the President declares an emergency or designates specific areas as "disaster areas." At such time the State Health Officer may direct that they be put into use at specified places.

# EMERGENCY HOSPITAL



## EMERGENCY HOSPITAL

Complete and ready to operate in a matter of hours, the hospitals need only to be placed in a large enough building and one that has some provisions for running water, facilities to prepare food, an adequate toilet and other sanitary facilities.

Each hospital can comfortably care for 200 patients and are equipped with this number in mind. It is expected, of course, that there will be many times this number of people served by the hospital for they will give first aid treatment and discharge patients without having to place them in beds for further treatment.

authorities may then use the prepositioned hospitals at their own discretion.

### **Excitement**

Injuries are only a small portion of the problems the prepositioned hospitals may be expected to handle. Experience with natural disasters has proven that there are other conditions which will very likely occur which would not have occurred if there had been no disaster. For instance, when Hurricane Donna struck south-east Florida the maternity section of Jackson Memorial Hospital at Miami was suddenly deluged with pregnant mothers who, because of excitement, fear and atmospheric conditions had gone into labor prematurely. There were 144 expectant mothers admitted during the hurricane and 66 babies were delivered, setting a new hospital record. The prepositioned hospitals will undoubtedly have cases like these with which to contend.

While we are on the subject it might be wise to pass on a few words of advice to those who might find themselves in a family shelter with a mother who might suddenly find herself ready to deliver. The family, knowing of the impending birth, would make some preparations in advance. In the shelter would

be stored some clean cloths and facilities for boiling water. Physicians tell us there are just a few simple rules to follow. They advise that the mother should be laid flat and kept warm to minimize loss of blood and danger of shock. The biggest danger potential is from infection. All you have to do is to observe some simple rules of cleanliness. First, the cord should be tied tightly with a clean cloth which has been boiled for five minutes. Next, the cord will have to be cut and only a pair of scissors or a knife which have been boiled for at least five minutes should be used. Normally, the placenta (afterbirth) will pass without assistance after the baby is born. The baby should be wrapped in warm blankets or kept warm by any feasible method.

Should the baby be born prematurely this might present complications which only a skilled physician knows how to handle. Needless to say, in both cases, medical aid should be sought at the earliest possible moment.

Excitement and fear sometimes trigger heart attacks. If you are in a shelter and a member of the party suffers pain in the chest, difficulty in breathing or "passes out" lay him flat on the bed or other flat

surface and keep him warm. If the individual has had such attacks before and there are medicines he uses at such times, then use them. Do not attempt to use home remedies or medicines with which you are unfamiliar. If the civil defense authorities issue a warning to get into a shelter, be sure you take with you the medicines members of your family take regularly, along with your first aid kit.

It just might happen that after you are safely in your shelter you discover that one or more of the children are coming down with a childhood disease, such as measles, mumps, chicken pox, etc. Since you cannot get medical help until Conelrad tells you it is safe outside, the best thing to do is to keep the children warm and quiet. Of course, as soon as possible, medical aid should be sought.

Though these problems will also be present in the community shelters where 50 or perhaps more persons will be living together the present planning is to have a shelter manager, and perhaps others who will be trained in the procedures to follow, living in each of the shelters. They will assume the responsibility of looking after the sick and injured.

## On The Way

Although evacuation to escape the blast of an atomic attack is no longer part of the civil defense planning, evacuation may be necessary under other conditions. For instance, suppose the city in which you live has not been the target of an atomic missile but the wind direction is such that the authorities feel the fallout pattern might become dangerous. Those who have no shelters or cannot be

No attempt has been made in this issue of *Florida Health Notes* to show the complex organization of all of Florida's medically-related personnel who will immediately swing into action if a disaster, civil or atomic, should occur. The various organizations of physicians, dentists, nurses, public health employees, etc., will be — and are — working to protect you in every way they can.

There are many other problems besides those concerned with health that one should consider in the event of any kind of a community disaster. We want to emphasize again — visit your local Civil Defense Authority to get the best and latest information. Ask how you can help.



admitted to a community shelter will be evacuated. This means a trip of perhaps a hundred or more miles to a comparatively strange place where you do not know what might await you. You may be able to ride and you may have to walk. But whatever happens there are certain basic rules of health you must observe.

Food and water we have already discussed. Except to add the warning not to eat vegetables or wildlife and fish you may acquire along the road we will elaborate no further. Unknown to you, fallout may have contaminated vegetables or waters in which you might catch fish for food. It is hoped that the civil defense workers will have an opportunity to survey such areas along the way and mark them if they are unfit for use. We repeat: do not drink water from ditches, streams or lakes unless it is thoroughly boiled first.

Poor sanitation, especially disposal of human wastes, is always a problem since it is the easiest way to spread many diseases. People who use the open ground for a toilet are subjecting others to exposure to diseases they may not even know they carry. If you must stay someplace in the woods or fields for a day or two, dig a

pit trench about two or three feet deep and use it, covering the waste after each use. If you must relieve yourself while on the way dig a small hole about six inches deep and use it, carefully covering it before leaving.

When you are admitted to a civil defense camp or housing area do your part to keep it clean. Observe the rules about garbage and waste disposal. People closely confined, as they will be in such areas, are likely to spread disease quickly among themselves and epidemics are something the health authorities will be fighting off from the first indication of trouble.

You will be immunized against typhoid fever and perhaps other diseases as the physicians may decide. It is conceivable that enemy agents might attempt to place germs in water supplies or food stockpiles which would lead to other physical problems among the evacuees.

Insects, such as flies and mosquitoes, spread disease and the entomologists of the State Board of Health will supervise the control of these insects. However, if you leave dirty cooking utensils or eating materials around which attract flies you will be making their jobs more difficult and you will have flies.

Due to destruction of hospitals, drugstores and warehouses there will be shortages of medical supplies and equipment. A proportionate number of the dead will be those in the medical professions. But materials and medical people will be moved into a disaster area as quickly as possible to minister to the needs of the survivors.

Disposal of the dead will have to be prepared for. Animal carcasses must be destroyed. Pets, of necessity abandoned by their owners, will be roaming the countryside seeking food and shelter. If they become a problem the health authorities will have the additional task of rounding them up, lest they revert back to the wild. Rats might come forth in hordes seeking food and, since they carry fleas which may spread disease, will be killed as quickly as possible.

There will be a few mental disturbances triggered by the stark reality of property losses or the deaths of loved ones. Psychiatrists will have their jobs cut out for them. Exper-

ience with the survivors of Hurricane Donna showed that sometimes it may be weeks before the full impact of the disaster hits some people, and then they need the aid and advice of psychiatric consultation or clinical help.

To sum up - the time to avoid most of the health problems written here is *now*. Attend a civil defense survival course. Enroll in one of the first aid courses prepared and given by the American Red Cross or have at least one member of your family enroll in the Medical Self-Help course soon to be announced by the civil defense headquarters in your area. Go to your nearest civil defense headquarters office and look through their pamphlets available free to you. You can find one that will tell you what to do or how to prepare for any difficulty or emergency you might encounter. You can learn what is needed to build a family shelter and how to stock it and prepare it for use.

Be informed - be prepared - and then act calmly.

"In the event of a war involving an appreciable number of nuclear weapons in the high kiloton or megaton range, fallout will probably be the greatest killer if we are not protected by shelter and if we do not take certain rather simple precautions. These precautions are so similar to the general hygienics that every housewife exercises every day that they are mentioned only to point out the fact that no one should be unduly fearful of the effects of fallout from the standpoint of personal contact or eating or drinking radioactive contaminants."

The above is quoted from a statement made by the Director of the Division of Radiological and Occupational Health of the Florida State Board of Health. It is this division's responsibility to maintain close surveillance over the fallout measuring stations all over the state today, and to make daily reports to the national headquarters for civil defense in Washington.

The Director followed the above statement with some good advice for citizens to keep in mind. Realizing that people may be forced to live in the open, or even forage for food in event of dire emergency, the subject of what is safe to eat and drink might become the most important part of survival. Therefore a few simple rules to follow are quoted:

First, if there are vegetables or fruits available be sure that you either thoroughly scrub or wash them. Peeling is even better, for the radioactive ash in the fallout lies on the surface of these foods and, if removed thoroughly before eating, will cause no harm.

Second, if fish are caught for food in a lake or stream that

may have been contaminated by fallout, they should be eviscerated (the intestines and other internal organs removed just as most people ordinarily clean fish) and either thoroughly scaled or skinned. Then skins, scales and viscera should be disposed of in a sanitary manner, perhaps burying them rather deeply in the ground. Do not throw this material back in the water. If small animals or game animals are killed for food they should be skinned and eviscerated and the refuse disposed of in the same manner as for fish.

As time passes there will be a deposit of Strontium 90 in the bones of all animals and fish but bones are not usually eaten anyway, so this is not a problem. Eggs will be safe since most of the contaminant will be incorporated in the shell. To be sure, there is a certain amount of contamination of all animal flesh by Cesium and a few other less important radioactive substances in fallout. In emergency situations, however, these amounts are of such small importance as to be of no concern.

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# FLORIDA HEALTH NOTES

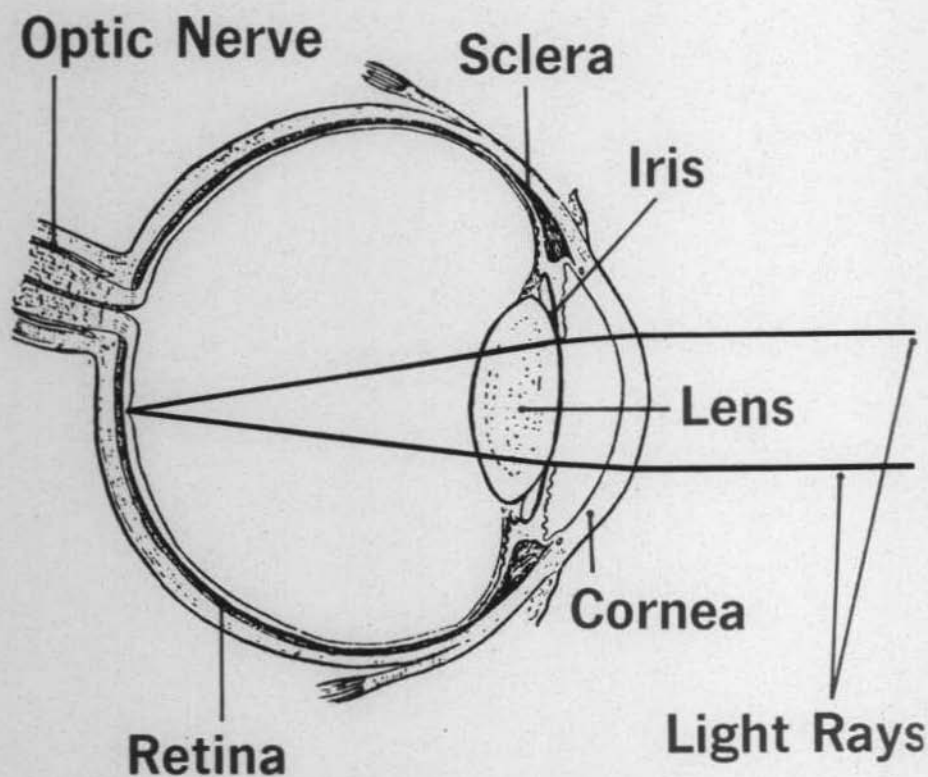
VOLUME 54 — NO. 4

APRIL,

1982

## PRECIOUS SIGHT

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Shown here are the parts of the eye which are referred to in several places in this issue. Light rays enter the eye through the Cornea. The Iris opens or closes depending on the amount of light entering the eye; in brilliant sunlight the Iris allows only a pinpoint of light to enter, but in a dimly-lighted room it opens very widely to allow as much light as possible to enter. The light rays admitted by the Iris pass through the Lens, which focuses them on the delicate nerve endings in the Retina. By means of the Optic Nerve these light impulses are transmitted to the brain where they are registered as "sight".

# Precious Sight

It is estimated that there are 12,500 legally blind people in Florida of whom 2488 are receiving Aid to the Blind funds through the State Department of Public Welfare. With our present population this means that approximately one in every 400 citizens of the state are without sufficient sight to support themselves and their families. Although the causes of blindness are many and varied, medical authorities tell us that *"Blindness could have been prevented in 50 per cent of the cases, if a routine of regular eye examinations had been followed."*

The Florida Council for the Blind, a state agency charged with the responsibility of vocational rehabilitation, medical help, and social services for the blind in the state, (see page 75) states that many future cases may be prevented by an active program of education — that the public is not aware that many people each year "drift" into blindness. An annoying minor defect in vision may become a permanent and incurable loss of vision before the person knows it. The answer in part is, as stated above, a routine eye examination as a part of a regular physical examination.

Since blindness, and more particularly the prevention of blindness, is a health problem the State Board of Health and the 67 County Health Departments are vitally interested in the programs already underway and those now being formulated to try to eliminate this problem to the fullest extent. The State Board of Health is assisting in several ways, particularly in the field of public education and school child examinations, to try to make people more aware of the dangers of neglect of eye problems. This issue of

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## FLORIDA HEALTH NOTES

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*Florida Health Notes* is one example of how we are trying to bring the message to you. In addition, because of the increased interest and activity in the field of such chronic diseases as diabetes, heart diseases, arthritis and cancer as well as poor nutrition, much is being done to prevent blindness as well as aid those afflicted with any of these disorders.

Our Bureau of Special Health Services, through its Division of Chronic Diseases, is participating actively in the coordinated efforts of several state organizations, both official and voluntary, in establishing clinics in strategic locations throughout the state. These clinics will be available to those older persons who need their eyes tested periodically for glaucoma and other conditions which damage the eye without warning symptoms.

The public health nurses in the County Health Departments are constantly visiting the schools, making routine eye checks or teaching teachers to do this simple test. (In some counties, civic groups have taken over this testing, under the directions of the public health nurse.) When a student is unable to pass the test or has other symptoms of eye trouble, the nurse sends a card home to the parents suggesting that he have his eyes examined more thoroughly. Sometimes this advice is heeded and sometimes not. If the problem seems severe or if the child shows up with the same problem on the next vision screening checkup the nurse sends another card home and, if possible, makes it a point to stop by the child's home and discuss with the parents the desirability of having his eyes properly examined. It is sometimes discovered that lack

#### **What Is Legal Blindness?**

A condition of eligibility for Aid to the Blind through the State Department of Public Welfare is based on the concept of "economic blindness" which is defined as loss of vision sufficient to cause inability to *effectively* do any kind of work, industrial or otherwise, in which sight is essential. Lest there be some misunderstanding, blind people who can support themselves do not receive money from the state for their support. Technically, a standard of 20/200 in the better eye with correcting lenses or, if the side vision has been reduced to a widest diameter of not more than 20 degrees, is accepted as blindness.

of money as well as lack of understanding on the part of the parents play a big part in their decision. The public health nurse sometimes refers such cases to the local welfare organization or to the neighborhood Lions Club, a civic organization interested in sight conservation.

### **What Causes Blindness?**

We are all familiar with the dramatic stories of people who are blinded by accidents. There is the child who was shot with a BB gun, or punched in the eye with a sharp stick or injured in athletic competition, and as a result has lost his eyesight. Industry has, for many years, pressed its campaign for safety of the eyes. Special goggles and glasses are provided for workers whose jobs carry a risk of eye injury. There are many stories in their files of men whose eyesight has been saved because they observed safety regulations and, needless to say, they are charter members of the "Wise Owl Club."

Parents are usually careful to keep eye-injuring materials out of the reach of toddlers; yet we still have our quota of sight injuries among small children. There are others who are injured and blinded by auto accidents, blows, chemicals — you name them. The general feeling is one of pity and concern, with a dash of thankfulness that "It didn't happen to me." But an important point is all too often overlooked: accidents rank *fifth* in the causes of blindness; so there are more of these accidents than one reads about in the paper.

### **Chief Causes**

There are *two major causes* of blindness in adults which "sneak up" on us with minimal symptoms until it is too late to do anything about them. Remember, while you are pitying the man who suffered a blinding accident, *you may be the victim of one of these causes and not even know it.*

The most prevalent cause of blindness is *cataracts*. Look at the illustration inside front cover. Find the part of the eye called the "lens." This is normally a clear portion of the eye. An oversimplified explanation is that sometimes the lens will begin to crystallize and as a result the vision becomes hazy and dim. If allowed to continue blindness is the inevitable result. Today, eye surgeons can often surgically remove the lens and then correct for good vision with glasses.





Many centuries ago men believed that increased pressure inside the eyeball was the cause of glaucoma. Lacking today's instruments they measured this pressure with their fingertips.

The next greatest cause of blindness is *glaucoma*. There are two types of glaucoma: *acute*, which occurs suddenly and is accompanied with piercing pain, and *chronic*, which comes on so gradually that the person does not realize there is something wrong with his eyes until it is too late. In glaucoma the fluid inside the eyeball, which is normally replaced routinely by the body, cannot escape the interior of the eye and presses on the retina. Thus the nerve ends in the retina which enables us to see and distinguish objects are damaged beyond repair. As yet medical science knows no way to restore vision to those people who have lost their vision due to glaucoma. The drawing on page 76 illustrates what happens when this condition occurs.



Today the ophthalmologist uses a simple, yet effective, instrument known as a Tonometer with which to measure internal pressure of the eye. Glaucoma in the very early stages is thus detected and treatment can be started.

Unfortunately, science does not yet know what causes either cataracts or glaucoma. This is why it is so important to you and your family to have your eyes examined as a part of your yearly or biennial physical examination. If the doctor can detect either of these conditions in the very early stages, your chances of preserving your vision are much better.

It has been conservatively estimated that two out of every hundred people past the age of 40 have glaucoma. The number in Florida is undoubtedly greater because we have more older people living here. Some of these oldsters will be examined by their doctors, the trouble will be detected in time, and blindness will

be prevented. But many of the others will wait until it is too late. If only our citizens over 40 could be persuaded to see their doctor for a routine examination at least every year!

Diabetics are still high on the list of the blind. It used to be estimated that 83 per cent of all people who had diabetes over 20 years developed *Diabetic retinopathy*. This is a disorder of the eye which may lead to partial blindness. Most authorities now agree that adequately controlled diabetes will prevent, postpone or modify the severity of all late complications of diabetes, including such eye conditions as retinopathy. It may appear in some instances to be unrelated to the severity of the diabetes.

**OPHTHALMOLOGIST or OCULIST** - a physician - an M. D. - who specializes in diagnosis and treatment of defects and diseases of the eye, performing surgery when necessary or prescribing other types of treatment, including glasses.

**OPTOMETRIST** - a licensed, nonmedical practitioner, measures refractive errors - that is, irregularities in the size and shape of the eyeball or surface of the cornea - and eye muscle disturbances. In his treatment the optometrist uses glasses, prisms and exercises only.

**OPTICIAN** - grinds lenses, fits them into frames and adjusts the frames to the wearer.

### Children

There are still some children who are born blind. However, it is comforting to know that the major causes of blindness in children 20 years ago have been virtually eliminated. In 1934, at the request of the medical profession, the Legislature passed a law requiring that each baby have medicinal drops placed in his eyes at birth. When a baby was born of a mother who was infected with gonorrhea, the baby's eyes might become infected during the birth process. This condition was called *ophthalmia neonatorum* (eye of the newborn) and often led to complete or partial loss of sight. The drops killed the disease germs and prevented blindness. If the mother had syphilis and was not treated early in pregnancy, the baby's eyes might be affected with a condition known as *interstitial keratitis*. This is one of the reasons that there is a law that says that every expectant mother must have a blood test during her pregnancy,

preferably by the end of the third month. If the mother is found to have syphilis and is treated adequately, her child will be born free of this disease. Both these diseases affected the cornea of the eye.

Not too long ago premature babies, placed in incubators at the hospitals, were sometimes blinded by a disorder known as *retrolental fibroplasia*. Today doctors know that this was caused by too high a level of oxygen being maintained in the incubator and this cause of blindness has been eliminated.

Today the chief causes of blindness in children are:

*Congenital (before birth) cataract*: a crystallization of the lens before the child is born and for which there is not, at present, any known treatment.

*Albinism*: a congenital condition where there is an absence of pigment in the skin, hair and eyes. Lack of pigment in the iris allows harmful ultra-violet rays to enter unfiltered where they damage the delicate nerve ends of the retina.

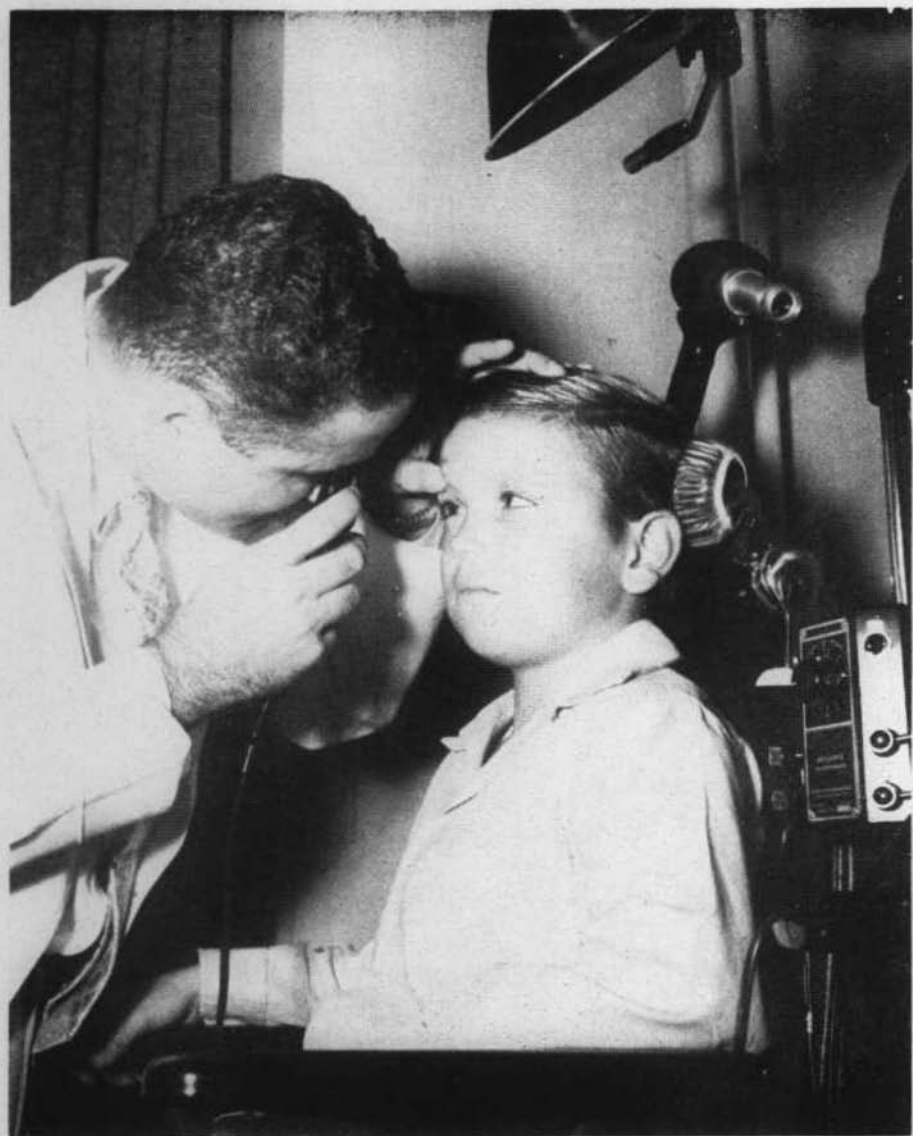
*Optic atrophy*: a defect or failure of nutrition manifested as a wasting away.

*Cerebral trauma*: damage to the optic nerve, sometimes occurring at the time of delivery.

*Congenital glaucoma*: hardening of the eyeball to a point beyond medical aid which occurs prior to birth of the baby.

If your physician said your child had *strabismus* you might wonder what he meant. But if he said he had "crossed eyes" you would understand. According to the Council for the Blind, this is one of the most prevalent problems where children's eyes are concerned. If crossed eyes are left unattended, the condition will usually cause trouble with vision and may result in a blind eye. This is due to the fact that the child will unconsciously repress the vision of one eye to overcome the element of double images. Eventually, the unused eye will no longer function even though it appears to be normal.

If your child is under the age of seven and his eyes are still crossed, medical aid can probably save his sight. Beyond the age of seven the chances of surgery or exercises doing much good are lessened.



Physicians tell us the two most important times in the life of a person's eyesight are early childhood and from middle age onward. Here the physician is using an ophthalmoscope.



The Council for the Blind has further estimated that at least one in every four children (of school age) has some kind of eye defect. Many of these children do not realize that they are living under a visual handicap. Parents may not take any action because the child does not complain or seem to be having any trouble. But parents should take heed if the child brings home a note from the nurse or the teacher that he seems to be having difficulty with his eyes. An alert schoolteacher deserves much credit for her ability to notice the little things in the classroom which make her suspicious of eye trouble. A teacher who sees a child squinting, or constantly rubbing his eyes, or who has difficulty reading from a textbook or even from the blackboard will usually notify the parents and suggest that it might be advisable to have their child's eyes tested. In this way teachers are responsible for the detection of a large number of early eye disorders, and the wise parent appreciates this attentiveness on the part of the teacher.

Special techniques have been developed for teaching children who are not blind but have sight defects which prevent them from normal participation in school routine. These students usually require much more light in the classroom and the reading matter is usually printed in large block letters. Pictures and illustrations must be bigger than for the ordinary child with normal eyesight.

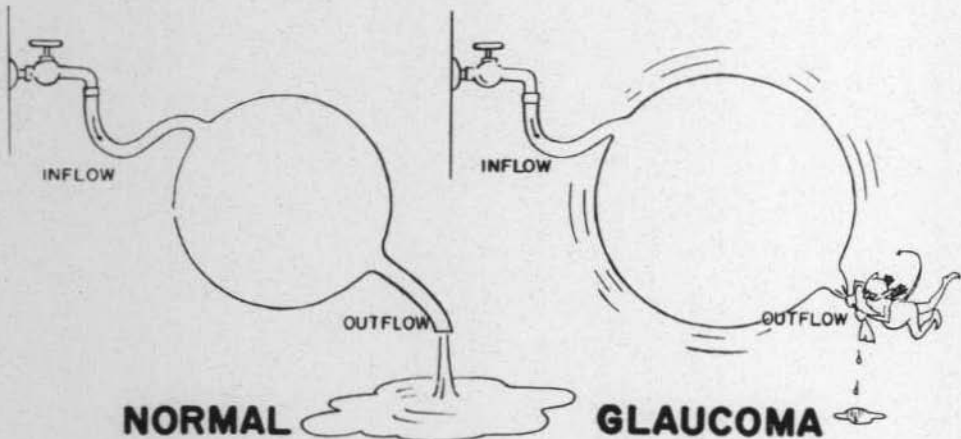
### **The Blind**

The State Board of Health is naturally most interested in the *prevention of blindness* and in doing all it can to help people understand what they can do through a better understanding of the causes of these tragedies. However, since the blind are among us and are ever-present reminders that we should have our children's and our own eyes checked, let us discuss them also.

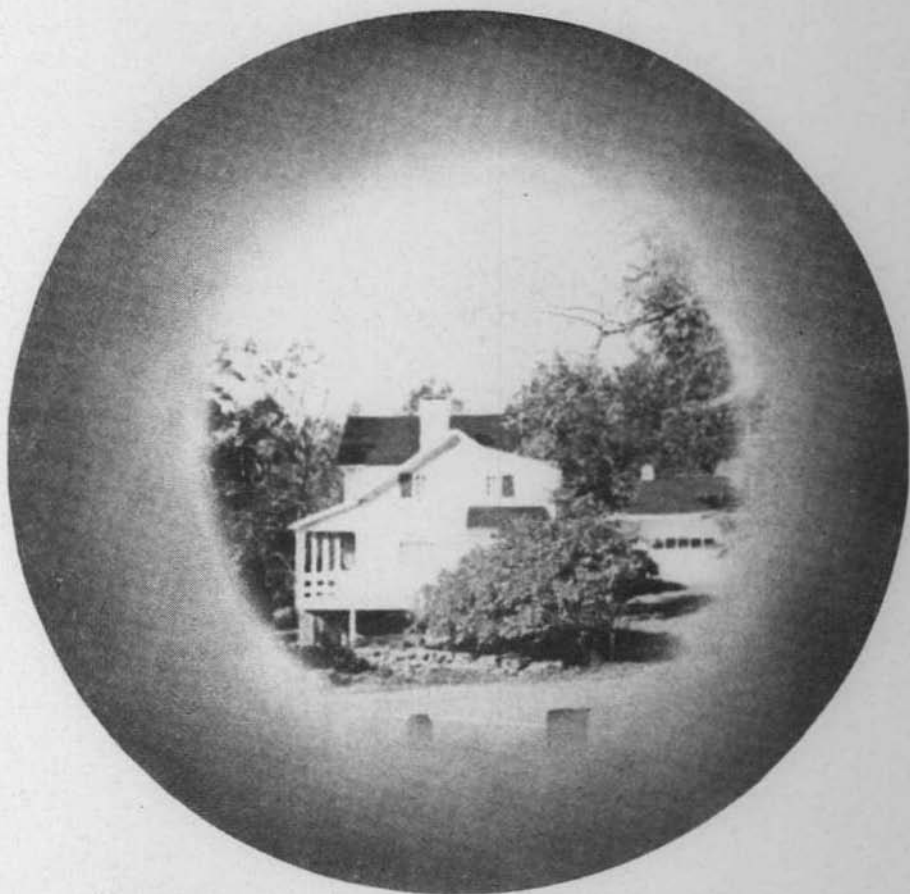
The Florida Council for the Blind and the State Department of Public Welfare are well aware of the problems of the blind. Not counting those who were born blind or lost their sight by accident, it is estimated that nearly two-thirds of the blind in Florida receiving state aid were once normal, healthy people who lived happy lives and were quite capable of earning a living or caring for their families and themselves. Then it used to be that with the onset of blindness, many persons could no longer



This is how the above house and surroundings look to a person with normal eyesight, as opposed to the picture on the opposite page. A person suffering from astigmatism would probably see the house either as a somewhat more squat structure or drawn out from top to bottom depending on the way the eye is slightly misshapen.



In a normal, healthy eye, fluid drains away at the same rate it is formed. In an eye with glaucoma something interferes with drainage of the fluid.



A person afflicted with glaucoma sometimes sees objects in this manner. On the preceding page we see the house as it appears to the normal eye. Loss of peripheral (side) vision is one of the symptoms of glaucoma. Normally, when a person looks at a point directly in front of him he should be able to see his hand with the arm extended straight out to the side.

find gainful employment. (Older citizens will remember many blind beggars on the streets.) They often became dependent on the state to see that their minimum needs were provided for. This was as much a blow to their pride as it was to their physical abilities. For this reason the Council for the Blind has energetically built up over the years a program of rehabilitation for those who can benefit from it.

Today a blind person who desires to work and is willing to be rehabilitated is given training in any type of work to which he feels he is adapted. If he needs specialized training, it is provided. If he needs tools with which to work, they are forthcoming. Through the media of "talking books" he can sit in his favorite chair and learn more about his chosen profession or simply hear trained voices reading good books or the latest magazine articles to him. He can learn to type, to repair certain kinds of mechanical or electronic appliances, to administer a business which he is capable of operating — or one of many skills. The "snack bars" seen in a large number of public buildings in Florida are owned by the Council for the Blind and operated by blind persons who constantly amaze their customers with their ability to capitalize on their other senses.

The blind who were once sighted may become quite depressed when first blinded. But the Council employs skilled people, many of them also blind, who teach the newly blinded how to read Braille, get about the streets of their cities, to board buses and make long trips, to find their way about their homes and many other things intended to not only train them in how to get along in their new world of darkness but also to give them the confidence they need to elevate their spirits.

The Florida Council for the Blind completed its twentieth year of service at the end of 1961. This was a year marked with medical services rendered to 2241 adults and 927 children. Eye surgery was performed on 561 adults and 291 children; 230 adults and 49 children had their sight restored and blindness was prevented in 72 adults and 95 children.

There were 93 blind people employed in the 85 Council-owned vending stands. The gross sales from these stands were \$1,430,824.03 for a net earnings of \$367,892.00. The 1961 income of the blind people operating these stands averaged more than \$4000 each.

The Florida State School for the Deaf and Blind is located at St. Augustine. As of March 1, 1962, there were 224 students of both races registered in the blind section of the school. In addition to conventional classroom studies the students also learn home economics and manual arts, such as woodworking, metalworking, chair caning, etc. The physical education program is not only unique but also very effective. The track team, by means of guide wires and other aids, practices as often as good weather permits and, together with the crack swimming team, participates in competition against other schools. The girls receive training in typing and learn to use dictating machines. Boys receive business education and all students show a great interest in music of many kinds. Officials at the school say the causes of blindness among their students are varied but, for the most part are from congenital defects. Those who teach their handicapped pupils are specially selected and trained to work with the blind. Patience is a prime requisite for a career teaching assignment at this school.

The students receive the equivalent of a high school education and many go on to college.

There are also those numbered among the state's blind who are not physically capable of being rehabilitated. This may be due to advanced age or type of injury or some other reason. In cases such as this the state Aid to the Blind program provides some funds for their care. Such aid is forthcoming only if the person is blind and also has need for financial assistance.

Mary Inez McCullough, a pert and pretty young red-head, wanted to be a school teacher. The fact that she was blind did not dampen this ambition. She attended the school for the Deaf and Blind in St. Augustine and graduated from Stetson University in 1961 with honors in elementary education. She completed her teaching internship in Daytona Beach. The Florida Council for the Blind provided her with a number of services that enabled her to complete her education and secure a teaching assignment. Therefore, it was a great day when reporters, photographers and television cameramen gathered in the principal's office of the J. Allen Axson School in Jacksonville to see Mary sign her contract to teach fifth graders.



If surgery or treatment is needed the Council for the Blind sees to it that such treatment is received and some of the finest ophthalmologists in the state regularly operate on and treat persons referred to them by the Council. State funds are used where needed to assure the patient the best treatment available. The Council maintains offices in Tampa, Miami, West Palm Beach, Jacksonville, Daytona Beach and Pensacola where people who wish may go for advice about their eyes. The State Department of Public Welfare, through its district offices, will assist people who need medical services for their eye conditions and who qualify for their services.

### **Glaucoma**

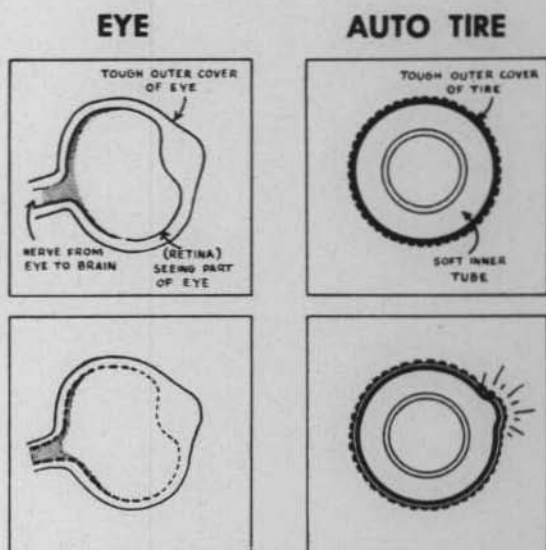
It has been conservatively estimated that there are 27,000 people over 40 in Florida who have *glaucoma* and do not know it. Many of these will not visit a doctor, and a large number of them live in rural areas where specialized medical services are not readily available. These victims will, unless made to realize that they should have their eyes checked periodically, gradually become blind.

With the knowledge that those over 40 need routine eye testing so that blindness as a result of glaucoma will not occur, a coordinated plan is now being put into action. It is known as the *Prevention of Blindness Program for Florida*, and is based on an educational program that will let people over 40 know of the need for testing — and where they may go to have this done.

This program represents a coordinated effort, and will depend for its success upon the joint efforts of those agencies in Florida now concerned with the problems of detecting visual defects and preventing blindness. Official, professional and voluntary agencies, and civic groups will combine their efforts to plan and execute this *Prevention of Blindness Program*. There will be an Executive Committee known as the Florida Coordinating Council for the Prevention of Blindness, which will consist of representatives of the Florida Ophthalmology and Otolaryngocology Society, Florida Medical Association, Florida Council for the Blind, Florida State Board of Health, Florida State Department of Public Welfare, Society for the Prevention of Blindness, Florida Division, and the Florida Lions Foundation for the Blind, Inc.

The primary function of the Coordinating Council will be to foster concerted community efforts, particularly on the state

Glaucoma squeezes the sight out of your eyes. Increased fluid pressure in the eyeball has an effect like that of increased air pressure in an automobile tire. This pressure damages the seeing parts of the eye.



level. Only in this way can the large masses of people receive examinations and can the potentially blind be discovered. Family physicians will be encouraged to examine the eyes of all their aging patients in the knowledge that some of the glaucoma (and cataract) victims can be discovered in this manner. Hospitals will be asked to include as a part of their routine admission examination vision screening of all patients over 40. Their outpatient clinics will also be requested to check their clients. In communities all over the state, civic organizations will be asked to undertake the important task of promoting programs to get the citizens of their communities to attend short-term clinics to be held by local specialists who will give their time.

But what is probably the most ambitious part of the program is the hope and desire to see the establishment of a number of permanent ongoing Prevention of Blindness Screening Centers in appropriate areas about the state, either on a regional or county basis.

The planning for these clinics will not stop at locating those who are developing serious eye defects and referring them to their physician for treatment. As the screening progresses the results of the tests will be carefully studied to determine if heredity has played a part in glaucoma. Or could it be that a pattern of past

diseases might begin to come to light as a result of the testing? This information might assist research scientists in their efforts to determine the cause of glaucoma and cataract.

### **Industry**

The number of industrial accidents resulting in eye injury or loss of sight has prompted the National Association for the Prevention of Blindness to sponsor their popular "Wise Owl Clubs." Workers whose jobs are such that there is danger of eye injury are urged to wear glasses with safety lenses and frames. The stories of some of their narrow escapes are frightening when one thinks of what the consequences would have been without glasses.

"A high-speed drill broke and a fragment of it smashed the right lens in my safety glasses . . . . I was chipping concrete from my mixer when a piece of it broke off and struck me across the nose and eyes. My safety glasses were shattered. There was no injury to the eyes, but the seven-inch cut across the bridge of my nose and cheek required six stitches to close . . . . I was using a one-inch hand sander when a piece of the sanding tool broke off and smashed the lens of my safety glasses. My eyes were not hurt . . . . I was driving my truck through a sugar cane field, and a piece of the stalk flew into the cab of the truck. It broke my safety glasses but did not hurt my eyes."

These and many more testify to the sight-saving advantages of using safety glasses at work, or if you are a do-it-yourself fan, you would be wise to buy a pair of such glasses to use at home. For when you use an electric drill or grinder, do you protect your eyes against tiny flying chips or even pieces of broken drills?

### **Home**

There are many things you can do at home to help prevent accidents that may result in the loss of sight, little things that you may not even think important until it is too late. For instance, did you know that the small batteries used in flashlights and small portable radios will explode and violently spray sight-destroying chemicals in all directions if they are carelessly raked into trash fires? What about low-hanging limbs on trees and bushes? Are the sharp ends of your wire clothes lines securely fastened where you are not likely to walk into them while hanging out the wash? Have you carefully taught your children how to intelligently use knives and scissors? The list of such questions could grow indefinitely. Just take a walk around your home.

"Nearsightedness" and "farsightedness" are not diseases of the eye. Neither is "astigmatism." None of these denote any deterioration of the eye or loss of vision. Instead, they can be explained by saying that if the eyesight is normal, the eyeball is shaped so that the focusing muscle does not have to work at all when you look at distant objects. And when you read, it has to focus only a little. If you are "nearsighted" your eyeball is shaped so that the lens is already in focus for nearby objects, but not for objects at a distance. If you are "farsighted" your focusing muscles have to work some even when you look into the distance, but they have to work much harder than those in normal eyes when you do close work. If you have "astigmatism" your eyeball is not perfectly round, but like an orange squeezed a little out of shape. When there is much distortion, things look a little crooked or fuzzy and the muscle around the lens must work harder trying to make the picture clear.

Any of these three defects can usually be cleared by corrective glasses. If you are told by your physician that you have one of these do not be alarmed - they do not cause loss of sight.

### **You Need To Know About**

There are two periods in life when the eyes should have special attention: during the school years and middle age. Though a young child has strong focusing muscles which do not tire easily a farsighted youngster needs glasses to give his muscles a rest. We know that there are indications that general good health helps nearsighted eyes, so children should be encouraged to get plenty of outdoor recreation, proper foods and plenty of sleep. And if you are well past 40 and have managed to get along without glasses up until now, it's just good common sense to have your eyes examined. Most people your age need glasses at least for reading.

Eyes are easily infected, so be sure to wash your eyes and the surrounding areas well as often as possible. Use plenty of soap and water and dry them well with a soft towel — *your own towel and not someone else's*. Keep your fingers away from your eyes. If dust, grit or slivers of metal lodge on the eye or the inside of the lid, go to a doctor or a first aid station and have it removed.



Don't dab at it with the corner of a handkerchief or let anyone else try to remove it either.

"Eyestrain" is just another name for tired eye muscles. Get plenty of sleep, for the eye muscles rest just like the other muscles of the body. When you read, hold the printed page about a foot and a half from your eyes, with a good light coming over your shoulder to avoid your own shadow. Indirect lighting is said to be better on the eyes than a bright beam concentrated on what you are reading.

If you wear sunglasses be sure they are of a good quality and optically safe. Cheap glasses cause the iris to open wider to allow

#### **WORLD HEALTH DAY — April 7, 1962**

April 7, 1962, was proclaimed as World Health Day by the World Health Organization. The theme of this day was "Preserve Sight; Prevent Blindness". The following excerpts are taken from the proclamation.

"Through the centuries, blindness and blinding diseases were regarded simply as part of mankind's unhappy lot, but such fatalism can no longer exist.

"Certain forms of blindness are not preventable, and some can be cured or even arrested. These forms of eye disease are, however, in the minority. Advances in medicine, surgery and public health practice now make it possible to control practically all the major causes of blindness.

"Sight is one of man's most precious possessions. Partial or total blindness will always remain a tragedy although one that can be mitigated by training which in some countries is enabling blind people to work and earn their living in competition with the sighted. The greater part of the world's blind however - millions of people - still have to suffer the additional distress of being an unproductive burden on their families or communities."

Helen Keller, the world's most famous blind citizen, has said: "If one-tenth of the money we now spend to support unnecessary blindness were spent to prevent it, society would be the gainer in terms of cold economy, not to mention considerations of the happiness of humanity."



### **Other Interested Agencies**

There are a number of lay and civic societies which are making contributions to prevention of blindness.

The Florida Society for the Prevention of Blindness, whose address is 2710 South MacDill Avenue, Tampa 9, Florida, has been organized since 1958 and is a division of the National Society for the Prevention of Blindness. The Florida Society has but one purpose and that is saving sight. This it does through its community preventive program of vision screening for children, glaucoma detection screening for adults, eye safety in industry and schools, and educational programs for partially-seeing children, etc. The Society does not duplicate the work of official agencies for the blind.

The Florida Lions Foundation for the Blind, Inc., a civic group, has a very active interest in the prevention of blindness program. Through their volunteers and financial assistance many demonstration screening programs for glaucoma are carried out. Medically indigent patients particularly children are oftentimes provided with appropriate eye therapy in the form of surgery, glasses or medication when the situation requires such assistance. The office of the Secretary is Post Office Box 4000, Margate, Florida.

Other civic groups and agencies such as Delta Gamma Sorority, the Knights Templar Foundation and the Pythian Sisters, give of their time and means in supporting prevention of blindness programs.

more light to enter the eye but the filtering of harmful rays is not good, and these rays enter in force to strike the delicate retina and may possibly do damage to the eyes.

Don't fail to heed these warning signs that may mean trouble to your eyes or those of your children. *See your doctor.*

Redness of the eye; discomfort or pain, especially after injury; squinting, thrusting head forward to see; covering one eye to see well; blurred or foggy vision, either close up or distant; rainbow halos around lights; loss of side vision; double vision; sudden appearance of floating spots; tired eyes, irritability or headaches after using the eyes all day.



One of the most important duties of the public health nurses in the County Health Departments is that of vision screening in the schools. In order that eye difficulties may be discovered as early as possible this program of screening has been going on for many years.

The student being examined here is identifying easily interpreted "E's" which are pointed in various directions. The student indicates with his finger the direction in which the three parallel lines point. The figures are lighted by a light source within the box in order that all testing be done under proper conditions and the results of the test are not influenced by different or varying light conditions from room to room. Other lights at the bottom of the equipment (not lighted in this photo) are used to test for muscular imbalance. This type of test, using the above equipment, is known as the Atlantic City Vision Screening Test and is a refinement of the Snellen chart.

In all of Florida's elementary schools the public health nurses or trained lay workers try to conduct eye screening tests at least annually. Although figures will vary widely in different localities the nurses in one county estimated that for each 40 pupils in a classroom the vision screening test will indicate that three to five pupils will require testing by an expert and probably one of the five will need corrective glasses or other attention.

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Governor of Florida

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All counties in Florida have organized County Health Departments

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# FLORIDA HEALTH NOTES

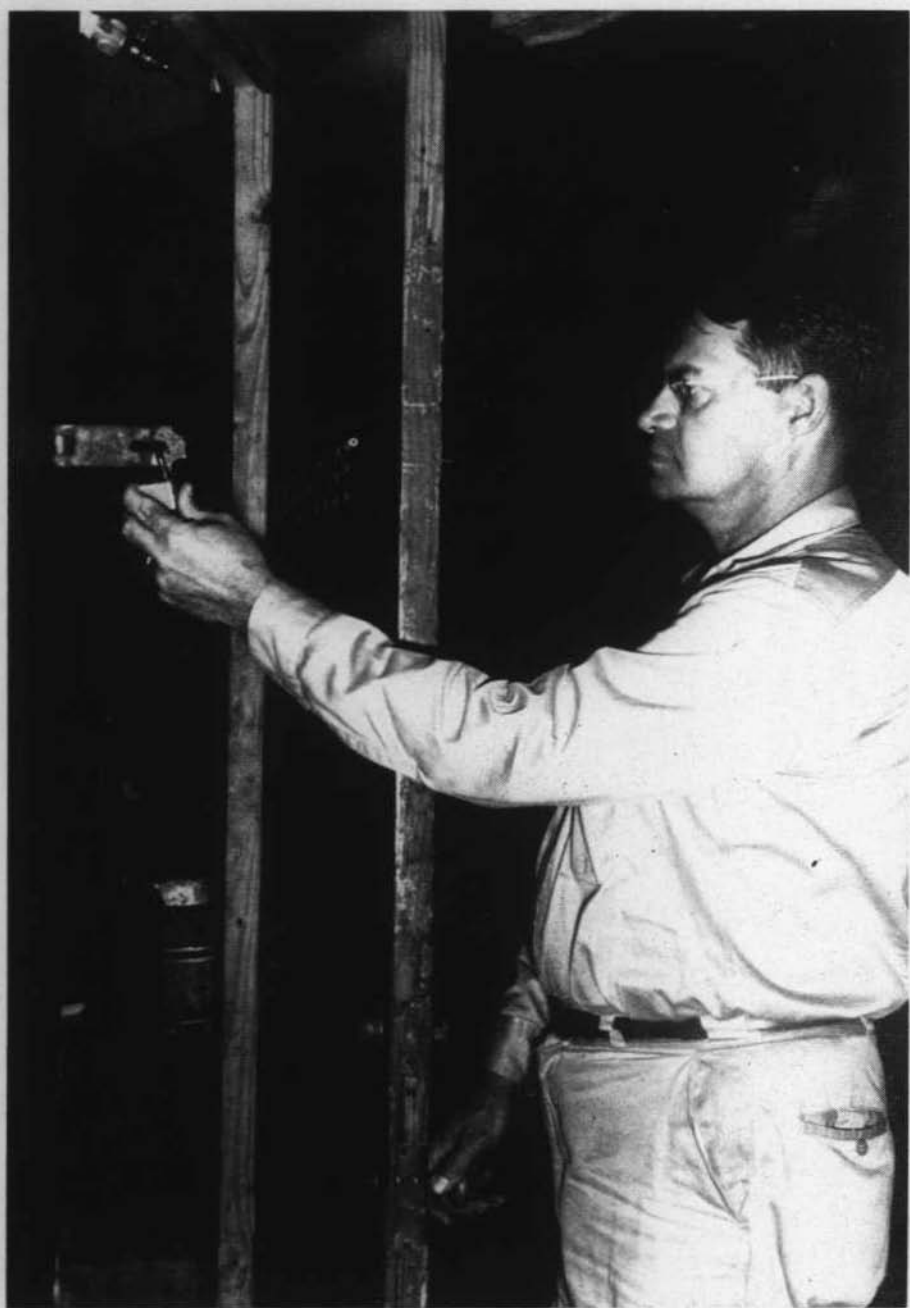
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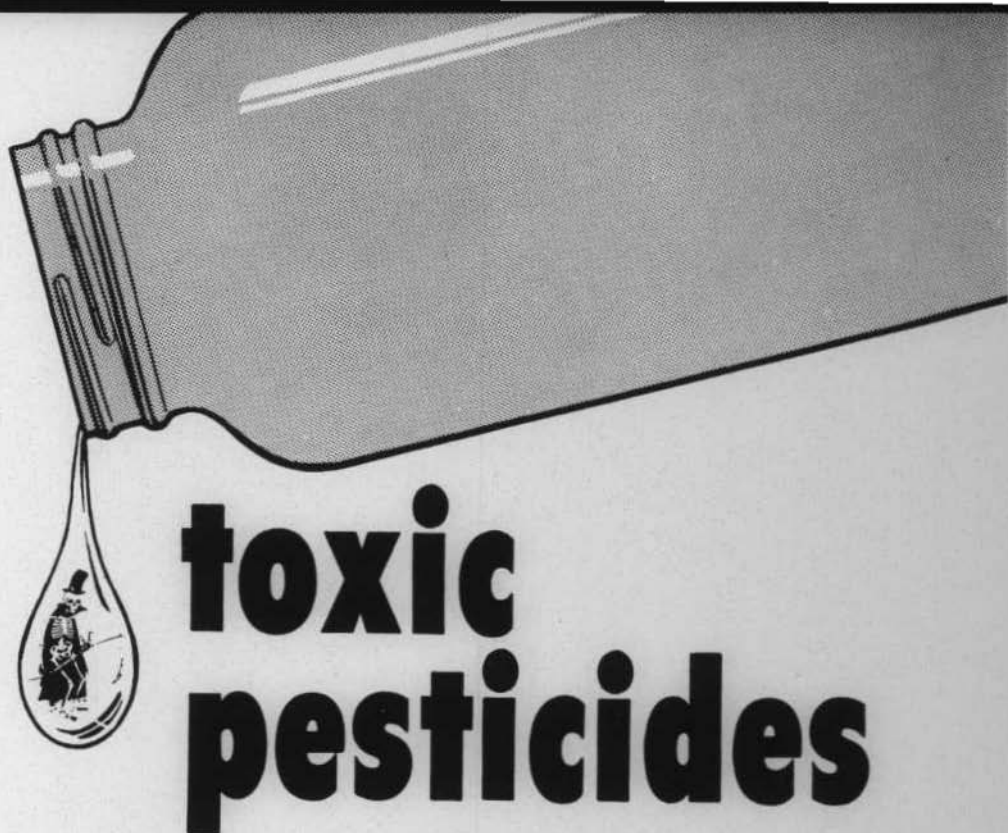
1962

## TOXIC PESTICIDES





**Highly toxic pesticides must be kept under lock and key at all times, whether in the storage area or on the truck.**



**TOXIC PESTICIDE:** A poison used to kill insects of public importance or other pests destructive to food crops or stored foods. May be either a liquid or a powder. All toxic pesticides may be injurious to health or deadly if used unwisely. Some of them must be taken through the mouth to become deadly - others are deadly if absorbed through the skin. Highly toxic pesticides should not be used by anyone except people thoroughly trained in their proper usage.

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#### FLORIDA HEALTH NOTES

Published monthly except July and August on the 5th of the month by the Florida State Board of Health. Publication office Jacksonville, Florida, headquarters of the State Board of Health. Entered as second class matter, October 27, 1921, at post office, Jacksonville, Florida, Act of August 24, 1912. It is intended primarily for individuals and institutions with an interest in the state health program, public and private. Permission is given to quote any story. Clipping of quotations or excerpts would be appreciated.

# TOXIC PESTICIDES

During the past year there have been on several occasions news stories about people dying as a result of exposure to *Parathion*. Most of these fatalities were children who had been exposed through the carelessness of an adult who had access to this miraculous pest killer - which is also deadly to man *when it is not used as directed*. Bear the above statement in mind as you read this issue of *Health Notes*, whether you be a student, home gardener, farm owner or operator. So . . . since Florida depends more and more on agriculture (including citrus) as a major part of her economy, we must all learn as much as we can about toxic pesticides, for only through their *proper* use can we grow the fabulous fruits and vegetables for which Florida is famous.

## Problem

Man fights a constant battle with insects, fungi and weeds in order to produce the food, fiber and shelter necessary to maintain our standard of living. Our chief weapons in combating these pests are chemical pesticides. To be useful, these materials must be toxic to the pest. Unfortunately this toxicity is not limited to insects, fungi and weeds. Most of these chemicals are also toxic to human beings and domestic animals.

Some of these pesticides are more poisonous than the venom of a rattlesnake. About three drops (.3 ml) of rattlesnake venom is sufficient to kill a 150-pound man. However, the venom must be injected or enter the body through a cut to cause poisoning. A sufficient amount of 80 per cent *Parathion* to kill a 150-pound man is also about three drops, but *Parathion* can kill by entering through the unbroken skin.

We all know that a car is a very useful item, yet if it is driven carelessly, it becomes a dangerous weapon. The same is true of pesticides. When used properly, they are valuable tools. If they are used carelessly, they can be very dangerous. Some pesticides are highly toxic to human beings. One drop of *TEPP*, *Parathion* or *Phosdrin* concentrate on the skin of a small child will usually be fatal. There is very little chance of saving the life of a child who has spilled a concentrated solution of highly toxic organic phosphate insecticide on his skin.

# METHYL PARATHION

Eighty percent solution in xylene

ACTIVE INGREDIENTS	80%
80% (80%) Diethylphosphorothioate	16.7%
Xylene	33.3%
INERT INGREDIENTS	20%

## DANGER

POISONOUS BY SKIN CONTACT,  
INHALATION, OR SWALLOWING.  
RAPIDLY ABSORBED THROUGH SKIN.  
REPEATED EXPOSURE MAY, WITH-  
OUT SYMPTOMS, BE INCREASINGLY  
HAZARDOUS.

## POISON

ATROPINE IS AN ANTIDOTE.  
CONSULT PHYSICIAN FOR  
EMERGENCY SUPPLY.

### DO NOT GET ON SKIN, IN EYES, ON CLOTHING.

Wear clean heavy rubber gloves, goggles, and clean water-proof or leather handwear protecting gaiters, trousers, rubber boots, cap, etc. Shower and change clothes frequently.

Bathe immediately after work and change all clothing. Wash clothing thoroughly with soap and water before reuse. In case of contact immediately remove contaminated clothing and wash skin thoroughly with soap and water. For eye flush with water for 15 minutes.

### DO NOT BREATHE FOG OR DUST.

Wear a mask or respirator of a type passed by the U. S. Department of Agriculture for METHYL PARATHION protection. In case of leakage cover with an absorbent such as soda ash, kieselguhr, or sand. Sweep up and bury. Wash area thoroughly with soap solution.

### FIRST AID TREATMENT.

CALL A PHYSICIAN AT ONCE IN ALL CASES OF SUSPECTED METHYL PARATHION POISONING.

If symptoms or signs of poisoning include blurred vision, abdominal cramps and tightness in the chest, don't wait for a doctor but give two atropine tablets (each 1/100 gr.) or more. Repeat patient immediately from the area where parathion is present.

Remove contaminated clothing and wash the skin clean with plenty of soap and water to remove all traces of methyl parathion. If swallowed, induce vomiting by giving warm salty or soapy water. Never induce by down and keep quiet.

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### NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON

PHYSICIAN'S NOTE: Warning symptoms include weakness, headache, tightness in the chest, blurred vision, non-reactive pupils, pallor, salivation, sweating, nausea, vomiting, diarrhea and abdominal cramps.

TREATMENT: Give atropine, preferably by injection, grains 1/100 three or more tablets at once and parenterally or orally every hour until pupils dilate. Urine or more tablets may

be required in the first 24 hours. Never give morphine. Clear chest by postural drainage. Artificial respiration or oxygen administration may be necessary. Observe patient carefully 48 hours. Reported exposure to cholinesterase inhibitors may, without warning, cause prolonged susceptibility to very small doses of any cholinesterase inhibitor. Allow no further exposure until time for cholinesterase regeneration has been observed as determined by blood tests.

Use maximum precaution when using pesticides that carry the skull and crossbones!

## Facts

The year 1961 was one of the saddest for Florida, as far as poisoning from *Parathion* was concerned. Ten individuals, most of them small children, lost their lives from contact with this organic phosphate insecticide. A number of children in Tampa took an innocent-looking burlap bag from a trash pile. The bag had been previously placed around a sack of fertilizer taken from a watermelon field at Nocatee in DeSoto County and transported to Tampa. The children filled the bags with rags and attached it to their swing around 11:00 a.m. That night around 7:20 one little girl was taken to the hospital and died soon after admittance. Her little brother became ill shortly thereafter and died in the hospital during the night. Three other children who had played on the swing were taken to the hospital but recovered. The burlap bag, upon chemical examination by the U. S. Public Health Service, was found to have been contaminated with an oil solution of *Parathion*, which caused the deaths of the two children and acute illness in three others who had had contact with the swing.

A third death was caused by a child contacting 15 per cent *Parathion* and *Chlordane* dust, which had been applied inside the home by an *unlicensed pest control operator* who was untrained and offered his services illegally. The most recent death in Tampa occurred in a 17-year-old boy, who was handling empty *Parathion* drums which had not been decontaminated before their sale to a junk dealer. Six other children died from contact with *Parathion*, which in most cases had been taken into the home.

In a small Florida town, not too long ago, a small child found a bottle partly filled with pesticide his father (a farm laborer) had brought home and deposited under the stair steps until he was ready to use it on some orange trees in the yard. The child opened the bottle and spilled some of it on his body. The frantic parents rushed the child only a few miles to the nearest hospital where, on the bulletin board of the emergency room, was a notice from the State Board of Health with complete directions for treatment of people poisoned with the toxic pesticide the child had found. The doctor immediately began the prescribed treatment but all in vain. The small amount spilled on the child coupled with the short period of time it took to get to the emergency room were of no avail. The child died during the night.

### Home Insecticides

The average housewife, reading about deaths from poisons used in agriculture, may wonder just how safe her mosquito, housefly and roach spray may be. Lest she be lulled into complacency and think she has nothing to fear, the chemists at the State Board of Health tell us that *any* of the insecticides will bring about serious illness and, possibly death if they are *consumed* by a person in sufficient quantity. However, highly toxic pesticides, such as *Parathion*, are not used in the home as are insecticides normally purchased at the nearest supermarket or filling station. But a word of caution is advanced here: If you spray your kitchen, for instance, with a very heavy concentration of an insecticide always have some ventilation and do not breathe the fumes for a long period. If your cooking and eating utensils are sprayed, be sure you wash them thoroughly before you cook in them or serve food on them.



Above all, the greatest hazard you face with home insecticides is in carelessly storing them where small children can get to them. Last year there were 425 cases of poisoning by home insecticides, rodenticides and herbicides reported by the 18 Poison Control Centers in Florida. Undoubtedly there were more which were treated by private physicians and which were not reported.

### **The Commercial Pest Control Operator**

In 1961 there were 983 lawn spraying Employers Certificates issued by the Bureau of Entomology of the State Board of Health. There were 2779 lawn spraying permit cards issued to employees of the above. Thus we see that lawn spraying encompasses a rather large number of people handling toxic pesticides and placing them on lawns to kill chinch bugs, mole crickets, moles and other lawn destroying pests.

If you are having pest problems and call a commercial operator, he will come with a truck and spray your lawn thoroughly to rid it of these pests. If he uses a highly toxic pesticide, he will advise you of this fact and then place signs and notices about the property warning people not to walk on the lawn or allow their pets to do so. You will, most likely, be given a card listing the the precautions you must observe for personal and public safety.

At all times you must bear in mind that you want the operator to rid your lawn of the particular insect or pest that is destroying it. To do so he must use the most powerful weapon at his disposal or you might not be satisfied with the results. If he is a good operator, he will see that the spray mist does not blow over into your neighbor's yard or offend him in any way. Usually, he will use a poison which is dissolved in water. *Be sure your operator is a State Board of Health licensed operator.*

Several Florida cities and municipalities have passed local ordinances regarding the use of highly toxic pesticides within the corporate limits. Some of these ordinances are an adoption of the State Board of Health regulations. In all cases the State Board of Health list of restricted-use pesticides was incorporated into the local ordinances. These cities are: Auburndale, Daytona Beach, Daytona Shores, Deerfield Beach, DeLand, Edgewater, Holly Hill, Lauderhill, New Smyrna, Ormond Beach, Port Orange, South Daytona, St. Petersburg, Tampa, Winter Park and Delray Beach.

**The Farmer Using Toxic Pesticides Should Know . . .  
(You - the public - should not handle it.)**

You should always know the safety precautions that apply to the pesticides that you are using. This information can always be obtained by *reading the label*. Never start spraying or dusting operations until you are thoroughly familiar with the directions and have taken all precautions listed on the product label. Foremen or production managers on farms should always give specific instructions to laborers in the proper mixing, handling and application of highly toxic pesticides. Supervisors should frequently check back to see that these safety precautions are being observed.



Neoprene gloves and other protective clothing must be worn when handling highly toxic pesticides. Besides the gloves, workmen should also wear boots, a respirator, a hat and coveralls or long-sleeved shirts to prevent even the smallest amount of the poison from touching the body.

Handling highly toxic pesticide concentrates allows very little margin of error and requires *strict adherence to safety precautions*. As an example, one fluid ounce of 80 per cent *Parathion* emulsifiable concentrate contains approximately 28,000 mg of poison. The minimum lethal dose of *Parathion* for a 154-pound man has been established at approximately 300 mg. Due to the high concentration of poison, all pesticide concentrates should be handled with caution.



The face and hands should be washed thoroughly before smoking or eating.

Protective clothing should be worn when handling concentrate materials and when applying highly toxic pesticides. This clothing should consist of rubber or neoprene gloves, water repellent shoes, coveralls, a hat and a respirator that has been approved for the chemical being used.

## Scrub

It has been shown that after 300 minutes of spraying with *Parathion* and then washing with soap and water, from 30 to 50 per cent of the *Parathion* remains on the skin. After a thorough rub-down with alcohol and brisk drying with a towel, five per cent of the *Parathion* still remains on the skin. Therefore, it is most essential that the skin be protected from the spray during the day and that thorough washing with plenty of soap is most important after engaging in spraying or dusting operations. Clothing that becomes contaminated should be removed immediately. Spray clothes should be changed daily. These clothes should be laundered with an excess of detergent and thorough rinsing. Store contaminated spray clothes, so that they are not accessible to children. Any other clothing, such as coats, jackets or shoes, that are exposed to pesticides, should be kept out of reach of children.

## Personal Care

While engaged in spraying or dusting with pesticides, all individuals performing operations should have available at location, a supply of clean towels and soap or detergent for thoroughly washing the face and hands before taking food or placing anything in the mouth. Smoking should take place only after washing the face and hands. A complete shower or bath with plenty of soaping should be taken each night after a day's spraying operations, in order to minimize the danger of pesticide poisoning.

If pesticide concentrates are spilled on the skin, spray or wash the contaminated area with water, then with soap and water. If the pesticide is a highly toxic material, leave immediately for the hospital. En route sponge contaminated areas of the body with rubbing alcohol, then dry the area quickly with a towel. Moisten the contaminated area with water, and apply baking soda. This procedure will remove and neutralize most of the poison.



Take a thorough shower after using a toxic pesticide.

### Storage

All highly toxic pesticides, when in use in agricultural areas or other activities, should be kept in a well-ventilated storage place, which should be secured at all times by a lock. Under no circumstances should a highly toxic pesticide ever be brought into the home. Only household insecticides, such as are sold in garden supply, hardware or food stores, should be kept at your residence. These materials, which are generally considered moderately to slightly toxic, should be secured in a locked cabinet or closet and by all means placed out of the reach of children. Even these household pesticides can kill small children.





**Don't leave toxic pesticides unlocked on your truck where children may get them out and accidentally poison themselves. Keep that truck storage box locked at all times.**

### **Disposal of Empty Containers (Farmers, please note!)**

The matter of what to do about empty containers is extremely important in agricultural or rural areas where pesticides are being used. Drums of the 55-gallon size or larger, when valuable and costly, and there is a good reason to salvage them, should be rinsed thoroughly by a worker wearing protective clothing. If even a few spoonfuls of the deadly poison remain in the container and it is upended for shipment or storage causing the poison to contact a person, it could bring about serious poisoning. Therefore, take no chances - see that the drums are rinsed thoroughly and carefully.

The smaller sized drums, of five and ten gallon size, should be punched full of holes and sold only for scrap metal. If this is not done, all too often the smaller containers wind up on farms and at homes as water buckets or feed containers. Law enforcement agents raiding an illegal still in South Florida even found an empty Parathion can being used as a condenser. So take no chances - punch the smaller metal containers full of holes and sell them for scrap metal.

Any sacks, rags or paper material which become contaminated with a poison pesticide should be burned and then buried at least 18 inches deep in the ground. The individual doing the burning should wear a mask and stay out of the smoke. When possible, the burning should take place at least a thousand feet from the nearest house or where livestock and poultry are penned.

At all times, *diligent care should be used in the handling of empty containers of any type which have held toxic pesticides.*  
**TAKE NO CHANCES! ! !**



All equipment used for the application of highly toxic pesticides should be washed after the day's spraying operations.

In metropolitan areas all disposable metal and glass containers should be thoroughly flushed out with water, punctured or broken, and disposed of by wrapping in paper, tying with string, and placing in garbage can, or by burying at an approved dump or sanitary landfill.



Empty containers in which highly toxic pesticides have been stored should be wrapped in several thicknesses of newspaper, tied with string and then placed in a garbage can or other disposal container.

### First-Aid

\* In case of poisoning by a toxic pesticide, *get to a doctor as soon as possible.*

\* If the poison was spilled on the skin, wash it off immediately and thoroughly with large amounts of soap and water. If the poison was an organic phosphate, it is also desirable to wash in rubbing alcohol or a dilute solution of washing or baking soda to neutralize any remaining phosphatic compounds.

\* If the poison was inhaled, move the patient to open air. If breathing has stopped, give artificial respiration.

\* If droplets or particles of poison have entered the eyes, flush thoroughly with plain water.

\* Keep the patient warm and as comfortable as possible.

## POISON CONTROL CENTERS

Treatment or medical information on pesticide poisoning may be obtained from the following:

Bradenton 4-0391	Veterans Memorial Hospital 206 Second Street East
Daytona Beach CLinton 2-5561	Halifax District Hospital Lakeshore Drive
Ft. Lauderdale JACKSON 4-0541	Broward General Hospital 1612 S. E. First Avenue
Ft. Myers EDison 2-1141	Lee Memorial Hospital 2776 Cleveland Avenue
Gainesville FRanklin 2-4321	Alachua General Hospital 315 S.W. Tenth Street
Gainesville FRanklin 2-3411	J. Hillis Miller Health Center Archer Road
Jacksonville EVERgreen 9-7761	St. Vincent's Hospital Barrs Street and St. Johns Avenue
Lakeland MUtual 6-1111	Lakeland Memorial Hospital Lakeland Hills Boulevard
Miami FRanklin 1-9611	Jackson Memorial Hospital 1700 N.W. Tenth Avenue
Miami Beach JEfferson 2-3611	Mt. Sinai Hospital 4300 Alton Road
Naples MIDway 2-2151	Naples Community Hospital 350 Seventh Street, North
Ocala MARion 2-4211	Munroe Memorial Hospital 1410 South Orange Street
Orlando GARDen 3-5511, Ext. 257-8	Orange Memorial Hospital 1416 South Kuhl Avenue
Panama City SUNset 5-7411	Memorial Hospital of Bay 600 North MacArthur Avenue

Pensacola HEmlock 2-1241	Baptist Hospital 1000 West Moreno Street
St. Petersburg 5-1181	Mound Park Hospital Seventh Street and Sixth Avenue, South
Sarasota RIngling 6-1181	Sarasota Memorial Hospital 1901 Arlington Street
Tallahassee 2-8060	Tallahassee Memorial Hospital North Magnolia Drive and Miscosukee Road
Tampa 8-0711	Tampa General Hospital Davis Island
West Palm Beach	Good Samaritan Hospital * * * * *

For those of you who are technically minded, here are a few more facts about toxic pesticides.

### How Pesticide Toxicity Is Established

The toxicity of a pesticide is determined by exposing test animals to known dosages of the chemical and by collecting and interpreting clinical data on human poisoning cases. In the case of test animals the chemical being tested is applied in several different ways — through the mouth (oral), on the skin (dermal), and by way of the respiratory tract.

The quantity of material that kills 50 per cent of the test animals is termed the LD 50. This quantity is usually expressed as milligrams (mg) (1/1000 gram) of toxicant per kilogram (kg) (1000 grams) of the test animal's body weight. Therefore, if a pesticide is listed as having an oral LD 50 of 24 mg/kg, it means that 50 per cent of the test animals were killed by a dose of 24/1000 (0.024) gram of this chemical for each 1000 grams of their body weight. Many people find this easier to visualize as parts per million of the test animal's body weight.

It is very desirable to know the human *minimum lethal* and *minimum toxic* dose of a pesticide. The *minimum lethal* dose is the amount of toxicant that causes *death* among the most susceptible individuals of a given species. Some individuals of any species of animal are more sensitive to a given toxicant than the majority of the species. For example, technical Phorate a phos-



phatic insecticide) applied dermally to guinea pigs is listed as having an LD 50 of 30 mg/kg. However, some of the test animals were killed at 20 mg/kg.

The minimum *toxic* dose is the quantity of toxicant which produces *poisoning symptoms* in the most susceptible individuals of a species.

### **What Is a Highly Toxic Pesticide?**

Every new pesticide is subjected to extensive laboratory tests on animals to determine its degree of toxicity before it is approved for sale. Appropriate precautionary warnings and recommended safety precautions must be listed on the label that is attached to the pesticide container. Both the United States and the State Department of Agriculture require that any pesticide that has an oral LD 50 of 50 mg or less/kg, a dermal LD 50 of 200 mg or less/kg, or an inhalation (breathed in) LD 50 of 200 mg or less/kg be labeled as highly *toxic* to man. These toxic pesticides are required by law to be labeled with the *skull and cross bones*. The word, "POISON," in red letters and antidote information are located on the label close to the skull and cross bones.

### **Types of Highly Toxic Pesticides**

The two major types of pesticides that are available on the market today are chlorinated hydrocarbons, such as DDT, and organic phosphates, such as *Parathion*. There are many other types of pesticides. In fact, just to list the categories and itemize the various pesticides would fill the major portion of this publication.

1. *Chlorinated Hydrocarbons - Mode of Action.* Chlorinated hydrocarbons act on the central nervous system, but the exact mechanism of this action is not known. All of this group of chemicals can be absorbed through the skin, in addition to being taken in through the mouth or by breathing dust, spray mist or vapor. These compounds are stored in fat tissue. Such storage results from either a large, single dose or repeated small doses. These chemicals are eliminated very gradually when further exposure is discontinued.

*Symptoms of Chlorinated Hydrocarbon Poisoning.* Early symptoms of chlorinated hydrocarbon poisoning are headache, nausea, vomiting and dizziness. Advanced symptoms include prostration and convulsions, followed by coma and death.

2. *Organic Phosphates — Mode of Action.* By far the greatest number of cases of phosphatic poisoning occurs among untrained individuals engaged in some phase of insecticide application. Absorption through the skin is the most frequent cause of poisoning. However, these materials can be taken into the body through the mouth or by breathing the vapor or spray mist. Smoking or eating while contaminated with phosphatic pesticides is inviting poisoning.

The organic phosphate insecticides affect man's nervous system through the inactivation of the enzyme, cholinesterase. This enzyme is found in the blood and tissue of animals and normally works as an inactivator of acetylcholine.

Acetylcholine is an enzyme that is formed between nerves and muscles to transmit an impulse or "nerve message" to a muscle. This causes the muscle to contract. Immediately after acetylcholine has transmitted this impulse, cholinesterase breaks it down into its component parts. Organic phosphates combine with cholinesterase and destroy this ability. If the cholinesterase level has been lowered by exposure to organic phosphate insecticides and it is not present in large enough quantities to neutralize acetylcholine, the muscle continues to contract. This same process occurs at many places in the nervous system.

Most phosphatic insecticides are about 1/3 as toxic dermally as when applied orally. One exception is Phosdrin, which is more toxic when applied to the skin than when taken through the mouth.

Exposure to small doses or organic phosphates at frequent intervals tends to lower the cholinesterase level and for practical purposes is additive.

*Symptoms of Organic Phosphate Poisoning.* Early symptoms of phosphatic poisoning in man are nausea, tightness in the chest, giddiness, cramps, headaches, excessive sweating, twitching of muscles and salivation. Frequently the eyes will have pinpoint, non-reactive pupils. Other symptoms include slowed heart beat, loss of reflexes, convulsions and coma. There are usually no symptoms or signs until the cholinesterase level reaches approximately 25 - 30 per cent of normal.

Phosphatic poisoning in the early stages is sometimes mistaken for heat exhaustion, severe respiratory infection or asthma.

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Governor of Florida

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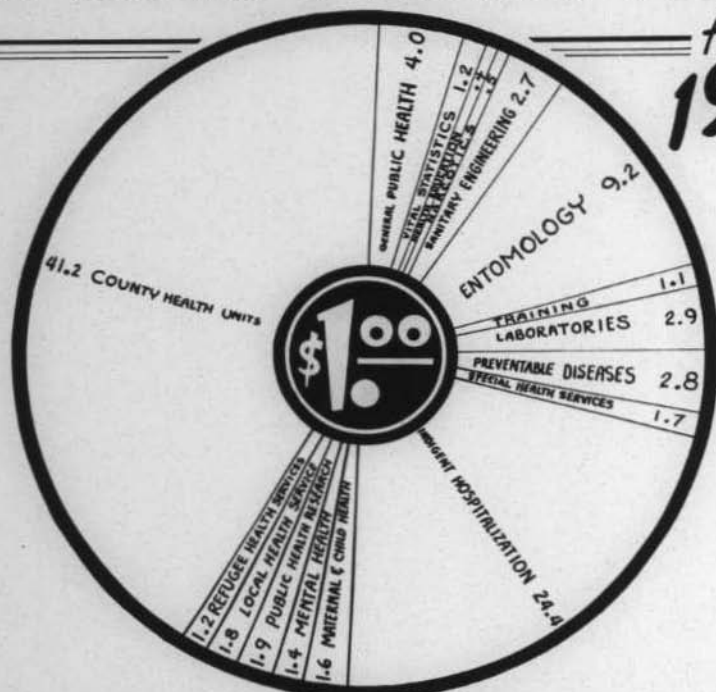
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# THE PROPOSED BUDGET FOR FLORIDA STATE BOARD OF HEALTH DOLLAR

for  
**1962**



GENERAL PUBLIC HEALTH	\$887,925	4.0
VITAL STATISTICS	255,742	1.2
HEALTH EDUCATION	96,752	.4
NARCOTICS	118,500	.5
SANITARY ENGINEERING	601,538	2.7
ENTOMOLOGY	2,031,392	9.2
TRAINING	233,346	1.1
LABORATORIES	647,123	2.9
PREVENTABLE DISEASES	623,526	2.8
SPECIAL HEALTH SERVICES	388,445	1.7
INDIGENT HOSPITALIZATION	5,410,500	24.4
MATERNAL AND CHILD HEALTH	363,956	1.6
MENTAL HEALTH	317,724	1.4
PUBLIC HEALTH RESEARCH	423,045	1.9
REFUGEE HEALTH SERVICES	275,100	1.2
LOCAL HEALTH SERVICE	395,240	1.8
COUNTY HEALTH UNITS	9,159,352	41.2

**TOTAL**

\$22,229,206 ONE DOLLAR

# Over Our Shoulder - - 1961

WITH A GREAT SIGH of relief the official Annual Report of the Florida State Board of Health for 1961 has recently been completed and submitted to the Governor. It tells in hundreds of pages of narrative, charts, graphs and tables of the myriad services rendered, problems solved — and not solved — in one year of effort. This issue of *Health Notes* is based on that Report, but it is not merely a condensation of it. In these few pages we have attempted to glance back over our shoulder and pick out some of the more interesting and newer things that happened in public health in Florida in 1961. It must be emphasized however, *that that which is omitted for lack of space is by no means least in significance.* Some of the most important things which happened in public health in Florida last year would take too long to tell in a publication such as this.

So . . . . if you're interested in your continued good health, read on . . . .

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## FLORIDA HEALTH NOTES

Published monthly except July and August on the 5th of the month by the Florida State Board of Health. Publication office Jacksonville, Florida, headquarters of the State Board of Health. Entered as second class matter, October 27, 1921, at post office, Jacksonville, Florida, Act of August 24, 1912. It is intended primarily for individuals and institutions with an interest in the state health program, public and private. Permission is given to quote any story. Clipping of quotations or excerpts would be appreciated.

## Health Services In Our Environment

**N**EARLY TWO MILLION DOLLARS of federal money was made available through the State Board of Health to construct sewage disposal plants, and 33 cities asked for this aid during the year, of which 13 will receive assistance. Over three million dollars worth of sewage disposal plants were built.

\* In industrial waste disposal the engineers did not approve plans submitted for laundry waste disposal where there was any chance of detergents filtering through the ground and eventually entering the water supply system. This is because detergents cannot readily be removed from public water supply systems now existent, and detergents could build up in the water supply until it foamed as it ran from the tap.

\* One composting plant, two sanitary landfills and 57 incinerators were approved for waste disposal. Incinerators are becoming more and more popular for apartment houses and supermarkets.

\* Drainage wells are often used for disposal of lightly polluted water, such as that from swimming pools and air conditioning systems. These wells carry waste water deep underground and disperse it into the water table. Approval was given to 180 of these.

\* Use of septic tanks and private wells continued to be discouraged except in "one house" rural locations where soil conditions were favorable.

\* There were 2288 swimming pools, operating under permit and plans approved for the construction of 312 new ones worth about four and a quarter million dollars. There were also 63 natural bathing places which were issued permits. These are "swimmin' holes" at summer camps and similar sites. They do not include salt water bathing places.

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\* Several countywide inspections of X-ray machines were carried out at the request of county dental associations. This was done to make sure that the machines were operating safely for the patient, the dentist and his staff.

\* All X-ray shoe fitting machines were outlawed and removed from service. Regulations require that X-rays may be used only

by properly trained and qualified persons. Such persons are not usually employed as shoe salesmen.

\* Air, rain water, milk and other foods were sampled for radioactivity throughout the year. During the fall, when the Russians were testing their multi-megaton bombs, air sampling was done on a 24-hour seven-day-a-week basis. This program is scheduled for expansion.

\* The shoemaker's children did not go without shoes. The State Board of Health and County Health Department workers involved in radiation activities wore badges which contained a film which could tell when they had had their maximum of permitted radiation. Four times during the year the badge said, "Enough," and thus these workers were saved from overexposure.

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\* The 1961 Legislature gave the Florida Air Pollution Control Commission greater authority. Now fines can be levied against violators of its regulations, and contact can be made immediately with new industries coming into the state to make sure they will take necessary steps to avoid causing air pollution.

\* We have better migrant labor camps — far better — say our sanitarians than we did a few years ago. Over a two-year period an increase of 285 per cent was registered in the number of approved camps for the migrant agricultural workers who are always on the move toward the ripening crops. These sanitation improvements should enhance the general health of Florida's migrant workers.

\* Rabid raccoons presented the "most pressing unsolved rabies control problem" in the state. There were 44 reported rabid coons, a number about twice as large as all other species together. A total of 429 humans had to take the painful anti-rabies shots, in many cases because the biting animal had been destroyed, was not found, or because tests showed the animal that bit the individual was rabid. Biting animals should always be impounded so they can be observed over a 14-day period to determine if they are rabid . . . . Rabies in bats continues as a "harassing" problem. The immunization of dogs and cats against rabies (that are often bitten by rabid wild animals) continues to be the best barrier between humans and this deadly disease. Dog vaccination is required by law in 19 counties and most municipalities.

\* Ten deaths due to parathion occurred during 1961. During this time the Florida Pest Control Association sued to prevent the State Board of Health from enforcing regulations to control the use of highly toxic pesticides, contending that this was the responsibility of the Department of Agriculture. A series of 11 public hearings were held to hear the opinion of agricultural leaders regarding similar controls for their industry. The court suit was still pending at year's end, tying the Board's hands and preventing enforcement of safety controls. In the meantime the emphasis is on education of the public to recognize the dangers involved in the use of these highly toxic materials, and urging everyone to take the necessary precautions. (See the May 1962 issue of *Florida Health Notes*.)

\* Encephalitis carried by mosquitoes caused seven deaths in one outbreak involving 25 victims of the disease during the year. Mosquito control officials believe this dread disease will increase in the future unless the state's five million dollar mosquito control program is expanded. They say this will occur because of increased ditching, impoundment, building of sewage plants and industrial plants in the fresh water areas where the encephalitis-carrying mosquitoes breed.

\* There was a big increase in the size and operation of the oyster industry in Florida. A number of new areas along our coasts were declared safe for oyster production. Florida had 114 shellfish production houses operating during the year. The very critical problem of patrolling unsafe areas to prevent the harvesting of oysters from them by unscrupulous persons remained unsolved at year's end . . . . Crabmeat production declined because the industry did not feel it could pay the wages required by the Minimum Wage Law. Crabmeat production requires much tedious hand work.



# Mothers and Children

WITH ABOUT ONE in ten births registered as illegitimate (better than one in four among nonwhites), this problem has many aspects.

\* Knowledge gained about premature infants at the Demonstration Center in Miami at Jackson Memorial Hospital is spreading throughout the state (and nationwide). Four seminars for nurses and physicians were held; three at Jackson Memorial and one at Jacksonville. Some 200 nurses and 35 physicians attended these courses.

\* Early detection and treatment of mental retardation was given a great deal of attention. Tests for phenylketonuria (PKU) are gaining in popularity, often being made routinely on infants and children suspected of retardation and on their siblings. This disease causes one form of retardation which can often be corrected by diet if discovered early. Study of the causes of retardation continued at the Developmental Evaluation Clinic in Miami.

\* Sixty-five schoolteachers were given short courses and field experience in County Health Departments in public health through the Teachers Project during the summer of 1961.

\* Florida's midwives are getting older and retiring one by one. As they pass from the scene, these mothers are being attended by physicians and more babies are being delivered in hospitals. The number of midwives decreased during the year from 228 to 217. Where midwives are still needed (in rural areas), new candidates are carefully selected and trained. As the number of midwives continues to dwindle, it is hoped that these mothers may have better medical service by physicians during their pregnancy.

\* Two mobile dental clinics — dentist offices in a trailer — were operated most of the year; one with a Negro dentist for Negro schools, the other for white. These trailers visit the various counties and give needed dental care to children who cannot afford it. The dentists did 7281 fillings, extractions and other procedures.

## *Ever-Present Problem*

ILLEGAL NARCOTICS accounted for 135 of the 289 arrests this year by our narcotic inspectors. Total arrests were 84 more than the previous year, primarily reflecting the increase in population. Cocaine was found in use in the Miami area for the first time — apparently a few Cubans were responsible. Cases involving barbiturates and amphetamines (pep pills and sleeping pills) rose sharply, a matter of deep concern to the State Board of Health.

## *Services for those who are ill*

BEDSIDE NURSING BY a visiting nurse to the chronically ill, the aged and the convalescent was available to approximately 40 per cent of the state's population by the end of 1961 (See Florida Health Notes, February 1962). This was the result of the rapid growth of the Community Nursing Service Program in 12 counties (or parts of counties) in which public health nurses employed by County Health Departments divide their time between the traditional school, clinic and teaching duties — and bedside nursing care. At year's end plans were moving rapidly forward to expand the services to the entire state under the joint financing of federal, state and county governments, with sponsorship by locally formed advisory councils.

\* Eight new hospitals with 746 beds and 86 bassinets were opened. At the same time the number of unlicensed hospitals (those whose facilities and/or practices made them ineligible for licensure) was reduced by more than half. This left only 12 hospitals with 282 beds in an unlicensable condition at year's end.

\* The state had 337 nursing homes, homes for the aged and homes for special services licensed during the year. These contained 9721 beds, not enough to adequately meet the need. Twenty-seven counties did not have a single nursing home. The State Board of Health added a specialist in church-supported nursing homes to its staff to assist in developing interest in that field.

\* Dental needs of the elderly in nursing homes and homes for the aged were studied in 20 counties. The purpose was to find out whether a special program of dental care services were needed for residents in these homes.

\* Better nutrition — and more variety, flavor and enjoyment — in the food of those who live out their golden years at home, in homes for the aged and nursing homes was a major consideration during the year. A dietary consultant was added to our staff. Her duties are to visit and consult with operators of such institutions to help them learn how to prepare appetizing balanced meals and at the same time to keep costs within practical limits.

\* About seven and a half million dollars of county, state and federal money was spent in Florida during the year for the hospitalization of persons who could not afford to pay their own bills. In addition to this, the counties alone spent some twenty million dollars for the same purpose, and many thousands more were expended from federal funds for prescriptions for drugs for welfare patients. (This latter program is administered by the State Department of Public Welfare.) This adds up to a lot of money. Even more would be available in federal matching funds if Congress would not require that Florida treat non-resident medically indigent persons over 65. The Florida legislature withheld the state appropriation which would have matched these federal funds, feeling that there might be a great influx of the aged indigent if free hospitalization for non-residents were available here . . . . . A significant change in the law was made which in effect made the benefits of the program available to certain types of cancer and mental patients not eligible before.

## Disease Prevention

INFECTIOUS HEPATITIS, A liver disease caused by a virus and sometimes resulting in a long illness, was more prevalent in Florida in 1961 than ever before. Four outbreaks were investigated and their spread stopped by injections of gamma globulin given to those close to the disease victims. Personal cleanliness and hygiene are recommended as a preventive.

\* Polio declined to far below any figure ever before reported in the state; only 41 cases, of which 37 were paralytic. Thirteen cases occurred among pre-school age unimmunized Negro children, but nine others were in persons who had had at least three Salk shots.

\* Diphtheria cases declined from 73 in 1960 to 43 in 1961. Crowded living conditions were regarded as helping the spread of the disease which frequently attacks very young Negro children in Florida.

\* There were 190 reported cases of food poisoning, 84 of them occurring in three outbreaks.

\* Bacillary dysentery increased fourfold over the previous year. About half of the cases occurred at a state institution. No source could be found for the disease, though close personal contact was blamed for its spread.

\* Three hospitals were investigated at their own request to help determine why they were experiencing outbreaks of the dread "staph" (staphylococcal) infection. Defects in aseptic techniques and housekeeping practices were found. The State Board of Health maintains a team of specialists to render such inspection services.

\* Viral encephalitis, with 97 cases, presented a serious problem. Intensive investigation not yet complete seems to show that the disease is carried by freshwater mosquitoes from wild birds, chickens, zoo animals and other sources.

\* An oyster worker was found to be a typhoid carrier, innocently responsible for several cases in north Florida. He no longer works with food.

\* One of the state's four tuberculosis hospitals has been closed, but there is still a long way to go. Active cases must be isolated, treated and rendered non-infectious. To avoid the cost of taking many thousands of X-rays to find one case of the disease, the tuberculin test is coming into ever greater use. When a child has a strong reaction to this skin test, the adult members of his family and neighbors are examined to see if by chance any of them have tuberculosis . . . . A new method of persuading isolated, reluctant groups to have an X-ray of the chest was tried in



Jefferson County with great success. Community leaders — people the community itself selected as those to whom they looked for counsel and leadership — were asked to advise public health personnel on ways and means to get people out for X-rays and to urge their people to visit the mobile X-ray trailer. It worked — a 500 per cent increase in the number X-rayed in some localities.

\* The alarming increase in early infectious syphilis, noted late in 1959, continued during 1961. The 1118 cases represented a 75 per cent increase over the previous year. Many public health leaders believe this is due to "lack of education, breakdown of morals and general apathy of the public." Venereal disease educational classes are being offered to the faculties of some high schools in the hope that teaching about this subject may be integrated into the curriculum of various subjects . . . . Homosexual practices are contributing to the increase of venereal diseases.

\* With the addition of Ormond Beach during the year the number of persons drinking fluoridated water in Florida — natural or man-made — rose to about a million. Approximately four-fifths of the children of the state are growing up with more dental cavities than they would have if they, too, could enjoy the benefits of fluoridated water.

## Disease Detection

THE TOTAL NUMBER OF examinations made by the State Board of Health laboratories was 2,686,166, a slight increase over previous years.

On January 15 it became the responsibility of the State Board of Health laboratories to provide services relating to the newly-enacted Food, Drug and Cosmetics Law. This legislation governs the standards of drugs, cosmetics and devices sold in Florida.

During the year the laboratories examined a total of 704,118 blood specimens for syphilis, of which 37,608 were reactive (indicating that further tests should be made to see if the person had syphilis). This gave a reactive per cent of 5.4 as compared with 5.2 and 4.9 for 1959 and 1960.



## A Statement by the A

Albert V. Har

"The problems in public health are manifold, but if there is one single issue which eternally confronts us it is the effort to improve constantly the public health program for Florida. And it is worthy of special note here that programs are in progress looking toward critical revaluation of current programs and exacting ones for the future.

It is difficult to capsule public health problems or solutions because both are constantly overlapping. But I believe the most significant matters facing us for the next decade will be the realms of **chronic illness** and **aged persons**. Hospital care for our aged and indigent is assuming increasing importance. Eighteen and a half million dollars has been allotted for the 1961-63 biennium for the county-state and state-federal programs. These matters involve many facets such as public health nursing, home nursing, rehabilitation and auxiliary services.

Of equal importance must be new emphasis on **mosquito control** and **environmental sanitation** — air and water. These will continue to present complex difficulties in suburban areas. They will continue to increase as the state maintains its rapid growth. And along with air pollution is the matter of **radiological health**. In this regard, the Governor has designated the State Board of Health 'the state agency for nuclear licensing and control.'

## ing State Health Officer,

M.D., Dr.P.H.

Then, there are imperative requirements concerning **mental health**. Essentially, these center around the the necessity of developing community responsibilities in handling more adequately those persons who have early signs of mental problems; of developing community means of preventing serious mental disease, and in follow-up of persons returning home from mental hospitals. There are many things involved in this, but it is chiefly a matter of evolving within each community the means of doing a better job.

We must not forget the ever-present hazard of **epidemic** — nor forget that public health workers are in the first line of attack and defense for the protection of Florida's residents and her visitors. There were two potentially dangerous situations last year: typhoid in Franklin County and encephalitis in the Tampa Bay area. These threatened outbreaks might have gone out of hand had not prompt control measures been taken.

Just as we have one major overall concern — the constant improvement of our public health program — so we have one principal problem in dealing with it. This plague is the perennial one of **money** and **men**. Florida faces with critical acuteness the demanding and far-reaching needs of a constantly expanding population and industry. These needs are growing much more rapidly than our resources: enough qualified personnel and enough money. We must be forever forward-looking but when we have found what we are looking for, we must be given — we must, in fact, already have in hand — the means of promptly approaching and firmly securing that goal."

A total of 39,091 tuberculosis specimens were examined of which 2296, or 5.9 per cent, were positive. There is still a significant amount of tuberculosis in Florida.

Florida dentists submitted 3693 saliva specimens to be tested for lactobacillus counts. The higher the count the more chance there is of the individual having dental cavities. The dentist uses this information to treat the patient and recommends proper diet to prevent cavities. This service is becoming more and more popular as the number of specimens submitted continues to rise each year.

The cooperative program of the laboratories of the State Board of Health and the State Tuberculosis Board completed its sixth year. This arrangement has been of mutual advantage to both - and to the tuberculosis patients in Florida.

A two-week workshop was held in Jacksonville for 10 bacteriologists from private and hospital laboratories in the state. They studied how to do more rapid identification of disease germs (streptococci) which cause certain diseases such as nose and throat infections that could cause rheumatic heart disease.

## Always something new - Research

**T**WENTY-SIX RESEARCH and demonstration projects to the tune of three-quarters of a million dollars were carried on by the State Board of Health; all of these were supported by funds from the federal government.

Research is the very heart-beat of science, and public health involves the application of many sciences to the problem of keeping people well. Major emphasis was on projects concerned with disease-bearing mosquitoes, the health problems of the chronically ill and/or aging, the total elimination of polio, finding the more elusive cases of tuberculosis and venereal disease, protection of humans from nuclear radiation, understanding the microorganisms that mimic tuberculosis germs — and even one project on research itself — how better to evaluate results of studies.

\* The fluorescent antibody technique for the diagnosis of rabies, tested over a period of years, became standard laboratory procedure during the year. The test may tell in a few hours whether animal brain tissue contains rabies virus, thus saving up to three weeks as previously needed to make this important test. The technique is now being evaluated for use in the rapid detection of other microorganisms.

\* The time-saving membrane filter test for the purity of drinking water has been adopted by the state laboratories and five County Health Departments.

\* The Entomological Research Center at Vero Beach — a mosquito laboratory unique in all the world — continued during the year to find out more and more about mosquitoes and other nuisance insects, and to demonstrate ways of using the knowledge gained in controlling these pests. In fact, there is a chance that some things learned about how mosquitoes use the food they eat may be of value to medical scientists studying atherosclerosis, the accumulation of fats in human arteries that sometimes leads to heart attacks.

\* Because mental health is so complex and is a relatively new program with public health agencies, much research is needed. During the year the State Board of Health studied the rehabilitation of former mental health patients, rehabilitation of treated alcoholics, relationship of social class to patient status and outcome of treatment at Florida's mental health and child guidance clinics, social and psychological factors which influence polio vaccine acceptance, and factors which influence persons to participate in X-ray screening programs.

\* Five years of research on the *Unclassified Mycobacteria* — germs that cause a disease resembling tuberculosis — ended, and a new three-year grant to support the program was received from the U. S. Public Health Service. So far the study has indicated that these organisms can range from no evidence of the disease to fatal illness. The victims come primarily from rural peninsular Florida, and affect mostly elderly Negro men who have lived in the same locality all their lives. These germs do not seem to pass from person to person.



\* Other research projects that might be of interest to you were: The five-year pilot program for giving health services to agricultural migrants ended in mid-year, was considered a success, and plans made to continue and expand this service. A study of mosquito-borne viruses was made on the Seminole Reservations in south Florida . . . . The effectiveness of purified Salk vaccine was studied in Hillsborough County . . . . A study was made to evaluate tuberculin tests in Duval County and at Sunland Training Center at Gainesville.

## The Mentally Ill

**M**ENTAL HEALTH AUTHORITIES estimate that there are 45,000 persons in Florida "seriously incapacitated with mental and emotional illness," and another 200,000 "needing the services of a psychiatrist or psychiatric facility" (such as one of the 17 mental health clinics). They believe that one in 10 school children "have serious emotional difficulties and need child guidance services." They say the lack of professional manpower to meet this need is becoming "more critical." However, seven of the clinics now have psychiatrists as directors as compared with four a year ago.

\* "Multiple Impact Therapy" — treatment or consultation with the entire family rather than just with the individual who is mentally ill — is gaining favor with clinic personnel, since it has shown very favorable results in a more rapid return to health.

\* The 25 mental health workers assigned to the various counties had an effective year. They assisted in making arrangements for 3536 patients to be admitted to Florida's mental health clinics, as well as working with juvenile judges and teachers, carrying on community education programs, etc.

\* At the end of 1961 there were over 500 hospital beds available in 14 *general hospitals* for mental patients. Figures concerning their use are not available, but in 1959 when there were 299 such beds a total of 5665 mental patients were treated, and 4500 of these



were discharged to their families and/or their jobs at the end of a short period of treatment. A much smaller number therefore are committed to a state hospital when local hospital facilities are available.

\* The "follow-up" program, in which mental health workers or public health nurses visit discharged or furloughed patients after they leave a state mental hospital, resulted in a reduction of patients who have to be readmitted to the hospitals. Authorities ascribe this improvement to the medicines the patients continue to take at home and to the follow-up visits by understanding public health people.

## Chronic Diseases

THE NUMBER OF tumor clinics (cancer detection centers) in the state was increased to 24 with the addition of two new ones during the year. The "specialist" services of these clinics are available to any patient referred by a physician. Hospitals adding the clinics were Variety Children's at Miami and Memorial at Ft. Pierce. There were 31,438 visits by patients to these clinics during 1961.

\* The Community Cancer Demonstration Project, started in Dade County in 1960 to show the feasibility of mass testing (Pap smear) for uterine cancer detection, was expanded to seven other counties. These tests were made available to mothers receiving Aid to Dependent Children. In one small county where only 57 women were tested, two persons were found to have uterine cancer. In all, 76 cancers have been found among 2815 women examined.

\* Plans were made to promote the passage of the Cancer Quackery Law, which failed to pass during the last session of the legislature. Too many of our citizens are victims of heartless quacks who "guarantee" cures.

\* Free insulin was distributed to 2850 persons through the County Health Departments and an increased appropriation of \$80,000 by the 1961 Legislature made this possible. Diabetes case-

finding went forward by means of community mass testing and particularly through the testing of relatives of known diabetics. It is believed that relatives of diabetics are five times more likely to have the disease than the general public.

\* A sodium content survey of the water supplies of Florida's communities was made. This was done so as to aid physicians in their treatment of persons who are suffering from certain types of heart disease where it is necessary to restrict salt. It was found that 16 coastal communities have enough sodium in their water to be of significance to patients who are on a low sodium diet.

\* Free penicillin or sulfa was supplied for 274 rheumatic fever patients who could not afford to pay for it. This was to prevent them from developing rheumatic heart disease.

\* The Florida Coordinating Council for the Prevention of Blindness was initiated. Representation from the Florida Society of Ophthalmology and Otolaryngology, Florida Medical Association, Florida Council for the Blind, State Board of Health, State Department of Public Welfare, Florida Society for Prevention of Blindness and Florida Lions Foundation for the Blind, Inc., makes up this Council. Its purpose is to coordinate the establishment of screening centers in the state which will lead to the finding of persons with glaucoma or other conditions affecting the sight. The first such Center is scheduled for Lakeland General Hospital.

## *Keeping the Record*

FLORIDA'S POPULATION WAS 5,158,100 at mid-year, increasing about one person every three minutes. There were 116,666 live births, a numerical increase of 1.1 per cent, but showing for the fifth straight year a decline in the birth rate. This is probably due to the ever-increasing number of people beyond childbearing age in the population — or 149 per cent increase of those over 65 in 10 years compared with a 79 per cent increase in the total population of Florida. Deaths totalled 49,110 at a rate which has shown little change over the past 10 years.

\* The 10 leading causes of death remained about the same: heart disease, cancer, stroke, accidents, diseases of early infancy, influenza and pneumonia, hardening of the arteries, diabetes, other diseases of the circulatory system and suicide.

\* There were 40,934 marriages recorded, while the divorce picture continued to darken with 21,492. This represents an 11 per cent increase in divorces. However, it is an improvement over the figures of 10 years ago.

\* Data processing — the accumulation, compilation and depiction of figures and facts by tables, charts, graphs — is the interest of a small group of workers in the State Board of Health. One phase of their work alone — the microfilming of old but necessary papers — saved the state an estimated 22 thousand dollars. The State Board of Health keeps up-to-date in the processing of statistics by computing and IBM machines.

## The Workers

THE STATE HEALTH OFFICER, Wilson T. Sowder, M.D. was given a leave of absence by the Governor to serve with the U. S. Public Health Service in Washington as Chief of the Office of Aging. Assistant State Health Officer, Albert V. Hardy, M.D., was made Acting State Health Officer. Two new members were appointed to the Board of Health. Eugene G. Peek, Jr., M.D., of Ocala, and Ashbel C. Williams, M.D., of Jacksonville, were appointed when the terms of office of John C. Milton, M.D. of Miami, and Sullivan G. Bedell, M.D., of Jacksonville, expired.

\* There were 2219 people who were employed in the state and County Health Department as of December 31. A total of 624 people were newly employed during the year and 458 terminated their stay with us.

\* The majority of public health services reach our citizens through one of Florida's 67 cooperating County Health Departments. Twenty-six have their own units with its doctor-director and a staff of one or more nurses, sanitarians and clerks. (The larger

ones of course have dozens of these and other health workers.) There were 14 counties where the time of the director was divided between two counties, and in 27 the director was shared with two other counties.

\* All told, the counties had 1549 people employed in public health jobs, of whom 78 were physicians, 308 were sanitarians, and 12 were sanitary engineers. There were 553 nurses, and several hundred persons in other positions.

\* One county, Hardee, built a new County Health Department building, and five others constructed additional or replacement health centers — auxiliary units located in parts of the county other than the county seat.

THE COUNTY HEALTH DEPARTMENTS were busy in 1962. For example, note a few of the following figures which we have culled from the year end report: (*Field* visits usually refer to those made to a person or establishment; *office* visits are those made by a person to a County Health Department.)

#### COMMUNICABLE DISEASE CONTROL

Hookworm treatments given	11,245
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Referred for further diagnosis and treatment	38,278
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#### IMMUNIZATIONS COMPLETED

Smallpox	85,970
Diphtheria	142,445
Whooping Cough	88,040
Tetanus	204,590
Poliomyelitis	276,848
Typhoid	78,751

#### DENTAL HEALTH (Dentists only)

Dental Inspections	80,456
Number requiring treatment	42,162
Number completing treatment	9,562
Number admitted to clinic for treatment	19,915

#### SCHOOL HEALTH

Number pupils examined by physician	67,345
Referred for further diagnosis and treatment	4,501
Screening by other health department personnel	504,001

#### MATERNITY SERVICE

Visits by prenatals to medical conferences	43,515
Field nursing visits	44,358
Office nursing visits	58,420
Number of midwife meetings	212
Visits for midwife supervision	1,324

**CHILD HEALTH SERVICES**

Field nursing visits	171,748
Office nursing visits	225,652

**VENERAL DISEASE CONTROL**

Treatment in clinic (completed)	11,937
Patients interviewed	5,883
Contacts obtained	11,063
Field visits	27,566
Office visits	82,591

**TUBERCULOSIS CONTROL**

X-Rays made:	
miniature films	448,362
14" x 17" films	45,289
Tuberculin tests	59,063
Field visits	39,657
Office visits	47,090
Cases hospitalized	1,641

**MENTAL HEALTH**

Admission to service:	
Children	6,518
State Hospital patients	3,712
Other adults	3,838
Field visits:	
With patients	10,831
About patients	25,362

**CHRONIC DISEASES**

Cancer Service:	
Field visits	12,789
Office visits	13,326
Diabetes Service:	
Field visits	10,727
Office visits	14,481
Cardiovascular Renal: (Heart and Blood Vessels)	
Field visits	20,067
Office visits	9,348

**PROTECTION OF FOOD AND MILK**

Field visits to food- handling establish- ments	169,283
Food-handlers trained	3,159
Field visits to dairy farms	11,170

**HEALTH INFORMATION**

Meetings attended	17,152
Lecture and motion picture showings	12,820
Radio and television programs	348
Exhibits displayed	380

**LABORATORY**

Specimens examined	642,051
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**SANITATION**

Private premises visited	200,849	Public water systems	10,935
Public premises visited	89,522	Public sewerage systems	6,776
Camps	6,062	Tourist and trailer parks	9,484
Schools	5,469	Child care centers	5,023
Swimming pools	15,793		



## Of course it took money

THE WORD "YEAR" as used elsewhere in this issue of *Health Notes* has referred to the calendar year of 1961. The state's business — or fiscal — year, however, runs from July 1 to the following June 30, and this is the period we will refer to in talking about the money spent by the people of Florida for public health "last year."

"Overall approximately \$18,700,000 was spent during the fiscal year —" says the Annual Report. "This represented almost two and a quarter million dollars more than was spent the previous fiscal year. In two instances there was a notable increase. The indigent hospitalization program increased about one and a quarter million dollars to a little over four and a quarter million dollars as a result of greater use of federal financial participation for those on public assistance rolls. The basic expenditures through County Health Departments increased almost three-quarters of a million dollars to slightly over eight million dollars for 1961, due primarily to more funds from local sources." About one and three-quarter million dollars of the money spent came from federal sources

## Education is one answer

EDUCATION PERMEATES ALMOST every public health program in which the State Board of Health is interested. We maintain a medical and public library, and audio-visual library; a pamphlet distribution system; and publish *Florida Health Notes*, which is distributed to 15,000 citizens 10 times a year. For example: Some 235,000 pamphlets were distributed; the Library handled more than 3500 requests for services; 6716 audiovisual aids were circulated; and five foreign visitors were received. Most everyone in the State Board of Health and County Health Departments is concerned with meetings, conferences, seminars, workshops — planning and learning how to better protect *your* health.

\* Education—basic education in health fields for promising and deserving students and high level specialty and refresher courses for seasoned career professionals—is a basic and continuing necessity in public health. The State Legislature has provided for scholarships for medical, dental and mental health students. Medical and dental students are required to pay back their \$1000 a year loans by practicing their profession in an area of the state designated by the State Board of Health as having a shortage of such services.

\* In 1961 there were 16 new scholarships for the study of medicine awarded, and 24 previously awarded were continued. For dentistry there were 13 and 23 respectively; in mental health there were seven residents in psychiatry when the Legislature terminated this phase of the program, as well as nine graduate students in clinical psychology; five in psychiatric nursing; 14 in psychiatric social work . . . Twelve individual grants for advanced study were given to career employees of the State Board of Health and County Health Departments.

# FLORIDA STATE BOARD OF HEALTH

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Governor of Florida

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All counties in Florida have organized County Health Departments

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A black and white photograph of a modern, multi-story building with a flagpole and a cloudy sky. The building has a mix of brick and light-colored panels. A flag is flying on a tall pole to the left. The sky is filled with large, dramatic clouds.

# FLORIDA HEALTH NOTES

VOLUME 84 — NO. 7

SEPTEMBER 1962

READING, WRITING  
AND RADIANT HEALTH



**TEACHERS**

**HEALTH**

**PROJECT**

**BETTER SCHOOL HEALTH**



## *Reading, 'Riting and Radiant Health*

The next time you drive to your office, or go to town, or start out on a trip, count the number of school zones you pass through. As you slowly drive by — the school crossing guard is watching — note the new schools, the expanded schools, the number which have temporary barrack-type additions. And if you go by a school early in the morning or in the afternoon, try to guess the number of children who stream in or out of the buildings.

Florida is having unprecedented growth in school child population. Over eight thousand additional children enter our schools each year. If you don't believe us, stop and think how many school-age children live in your block. For example, Dade County's education officials said some years ago that if they could build a new classroom every day in the year, they still couldn't keep up with the demand.

Why are the State Board of Health and the 67 County Health Departments concerned with school children? We're interested in their health, that's why. One of the basic foundations of all public health activity is work with mothers and children. And we try constantly to think of new ways through which we can help teachers — your child's substitute parents during a major part of each day — to learn more about health so that they can in turn pass it on to their students in one way or another. One new and fairly unique device is through the Teachers' Project.

The Teachers' Project in Health Education's purpose is simple and direct — to bring teachers in closer contact with health agencies, both official and voluntary, which contribute to the improvement of the health of the school child. This is done by giving selected teachers a summer course at the college graduate level in which they receive some classroom instruction, but spend most of

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### FLORIDA HEALTH NOTES

Published monthly except July and August on the 5th of the month by the Florida State Board of Health. Publication office Jacksonville, Florida, headquarters of the State Board of Health. Entered as second class matter, October 27, 1921, at post office, Jacksonville, Florida, Act of August 24, 1912. It is intended primarily for individuals and institutions with an interest in the state health program, public and private. Permission is given to quote any story. Clipping of quotations or excerpts would be appreciated.

their time visiting and taking part in the work of these agencies.

The teachers receive college credits for the course. The project is sponsored jointly by the State Department of Public Instruction, State Board of Health, the universities involved, selected County Health Departments and school boards, and various local voluntary agencies which may give scholarships to assist the teachers financially. Most of the actual work of the project is carried on by the County Health Department staff who work each day with the teachers during the four-week course. There is little to be gained by describing the administrative complexities of the Teachers' Project. It is sufficient for our purpose here to say that this year the summer courses were given by the University of Florida, Florida State University and Bethune-Cookman College at Daytona Beach. Teachers may choose the school they wish to attend.

With minor variations the courses are quite similar. The teachers — from one to three from various counties — gather at the university and register. For the next two days they listen to lectures on the purpose and scope of the course, learn some basic facts about public health and participate in question and answer periods. Then they go back to the counties in which they will teach during the next year and go to **work** — not as teachers, but as observers of public health workers at their jobs. A teacher may spend several days accompanying a public health nurse on her rounds of home visits, clinics, mental and tuberculosis hospital discharges follow-ups and so forth. Another day she may spend travelling with the sanitarian as he inspects restaurants, garbage disposal plants, swimming pools, trailer and labor camps, and the many other places to which his work takes him. She will spend several days visiting the local offices or representatives of the many voluntary health organizations such as the Cancer Society, Heart Association, Crippled Children's Commission and the Council for the Blind. As nearly as possible she will visit the majority of the agencies, tax-supported or voluntary, which at some time might be called upon to assist with a health problem of some child in her classes, or who have information that she might use in teaching various health subjects. Even at the health department itself there is much to be seen — the work of the vital statistics clerk with her birth and death registrations, the many knotty problems which only the medical director can solve, the constant stream of visitors, and much more. It is to be emphasized that the teacher is not learning public health **theory** but the **direct practical application** of the work of these agencies to health and/or health knowledge of the children in her classes.

At the conclusion of this field work the teachers gather again at their university for a summary session. They exchange experiences, ask volumes of questions, hear more lectures and turn in a



**Two teachers enrolled in the Teachers' Project in Health Education are conferring with the public health nurse. In their schedules, they visit private homes, hospitals, clinics and other official-related agencies.**

"term paper" on their work. A great deal of this final discussion and planning has to do with how the teacher will make practical use of the knowledge she has gained during the course. Will she be more alert to hearing problems? The child who may have intestinal parasites? Plan for the inclusion of more lessons on health? Be interested in encouraging her children to eat in the lunchroom? The applications she may make of her new knowledge are as varied as the teachers themselves.

Each school in Florida has one teacher who is designated as "health coordinator." It is the responsibility of this coordinator to handle many of the details of the school health program. She may assist other teachers in learning how to keep the children's health records, plan the showing of health films, help the county public

nurse during her visits, and generally promote and carry out the health program of the school under the supervision of the principal. Many teachers, after completing the Teachers' Project, are appointed health coordinator at their school for the following term. Frequently they request this assignment — which can only mean extra work for them.

### **How It All Began**

In 1954 a group of students from Turkey were studying at the University of Florida. It was found that many of their problems centered around the health of children. These students asked to be shown what the public health workers of Florida were actually doing to put into practice what teachers were taught about health in our university classes. So the students were taken on a visit to Jacksonville to see the State Board of Health, and to many rural County Health Departments and voluntary agencies. They each stayed a week in a rural county, usually living with a local family. Their instructors and the students themselves were so enthusiastic about the project that the idea was expanded, and Florida teachers were invited to take summer courses and make the same kind of field visits, both in urban and rural counties. The Teachers' Project began in 1955.

No new idea ever engenders the same amount of enthusiasm from everyone it involves. But among those who have taken part — including school administrators, teachers, and County Health Department personnel—the reaction has been all but unanimously favorable. The consensus is that the new knowledge of public health functions gained, the new friends made and the new awareness of the things that can be done for a child whose health—mental, emotional and physical—is below par are a definite asset to the health program of the school.

Another worthwhile result of the Teachers' Project is the mutual respect which teachers and public health workers develop for each other. After a day of trotting around in the July heat with a sanitarian, a teacher is well aware that she is not on a vacation. And after a few days of association with a teacher, hearing her problems and answering her questions, a nurse discovers that a teacher's life is something other than a bed of roses. Each realizes that she can complement the other — in knowledge of what constitutes the community's health problems as well as those of individual children.



## Teachers' Contributions

The value of the new knowledge and awareness gained in the Teachers' Project by a classroom teacher can best be shown by an example. We will take the story of two nine-year-olds, Jimmie and Charlie, and tell it once as it might be in the class of a teacher who had never had any training or experience in health matters, and once as it might be in the class of a teacher who has participated in the Teachers' Project.

Jimmie sat in the back of the room. It was a hot spring afternoon, the children were restless and the teacher was tired. She asked Jimmie a question. He responded vaguely, not really answering the question, and she turned to another child. Inattentive and disinterested as usual, she thought. Jimmie was glad to be let alone. He didn't like school. After class the teacher remembered Jimmie as a boy who never gave her any trouble, but did not seem to be very bright.

\* \* \* \*

Charlie sat in the back of the room. It was a hot spring afternoon, the children were restless and the teacher was tired. She asked Charlie a question. He responded vaguely, not really answering the question, and she turned to another child, making a note to consider Charlie's problem later. Charlie was glad to be let alone. He didn't like school. After class the teacher considered her note. Charlie never gave her any trouble, but was not very responsive. She decided to speak to the public health nurse from the County Health Department about him. She told the nurse she felt he was either retarded or slightly deaf. She had met and worked with the nurse during the Teachers' Project.

The nurse had a talk with Charlie, and when she intentionally said something in a low voice, he apparently did not hear her. She scheduled Charlie for a school hearing test, and it was found that his hearing was below normal. His parents were notified and urged to take him to their family physician or an ear specialist.

In the meantime, the nurse and teacher agreed that he should sit in the front of the room. If the parents did not respond to the nurse's note, the teacher would let her know and the nurse would make a home visit to see if the family needed financial help. If they did, the teacher had learned that there were a number of agencies who assist handicapped children. During the Teachers' Project she had visited the executive secretary of a local organization which she was told maintained a fund for the assistance of school children needing special care or attention of some kind.

Now Charlie wears a tiny hearing aid so small he hardly notices it, and his grades are improving, while his interest in school has been greatly stimulated.





The teachers visit voluntary health organizations, such as the tuberculosis association, cancer society, mental health, heart association and other agencies to find out the functions, activities and resources of the privately-financed groups.

What was the difference between the teachers in our two stories? Awareness of the fact that facilities exist for solving health problems for school children had been gained by the second teacher. Both enjoyed their students. Both were capable teachers. Both knew Jimmie and Charlie were in some way abnormal. The second was more **keenly alert** to watch for the signs of need of assistance because she **knew what to look for**, and **knew something could be done about it locally**.

Let us assume a teacher has 30 students in her class. Over a period of time she becomes familiar with all of them, and sees no

apparent health problems in say 24 of them. She talks over the remaining six in her regular discussion with the public health nurse who is assigned to her school. The nurse knows two of these children, and says that everything possible is being done for them by their families and local facilities. The nurse sends notes home with the remaining four, telling the parents the health problem that has been observed or suspected and recommending that the child be taken to the family doctor. In two instances this is done, and in two it is not. And these last two (or whatever number remains) represent a large proportion of the time and effort that must be spent by the nurse and teacher in "follow-up."

Are the parents merely indifferent, too busy or financially unable to do anything about the child's condition? Is there a broken home, with only an overworked mother who cannot shoulder the extra burden? If the answers to such questions are that the parent(s) cannot pay a private physician, the county health officer will usually examine the child. Naturally, a private doctor who has known the child since infancy is usually best qualified to help him. But something must be done for he needs help now, so the county health officer, the public health nurse, the teacher, the principal and perhaps various interested agencies in the community along with the parents may start the wheels rolling to see that he gets the help he needs now for any **remediable defect** he may have. Lack of money is not always an obstacle, but indifference can be a tremendous barrier.

Many teachers do not need to take the Teachers' Project course. From long experience they know what to do. Others may be just as alert to the children's health needs, but are new in the county and do not know what health facilities exist.

And finally, we must remember that the Teachers' Project's greatest value lies in the fact that it gives the teacher knowledge and training that **takes up where the routine school health program leaves off.**

### **The School Health Program**

The school health program is usually divided into three parts: services, instruction and the healthy school environment. The services include various screening and follow-up procedures, emergency care in case of injury or sudden illness, and care and treatment where needed and not otherwise provided. Instruction involves classroom teaching, along with films and demonstrations, and what-

ever physical education courses or periods may be included in the curriculum. The healthy school environment — probably never noticed by the child — is promoted by public health authorities in many ways. The health department's approval was required by law when the school was designed and constructed. The physical well-being of the children was considered when heating, lighting, ventilation, stairways, desks, washrooms and other parts of the building were installed. The daily cleanliness of the washrooms and cafeterias is the concern of the county sanitarian, who makes his suggestions to the principal and custodial staff.

It would serve no worthwhile purpose to go into the history of the Florida school health program here. A volume could be written on the subject, but it would contain no great drama or startling details. One could discover that in the early days of "readin', writin', and 'rithmetic" the school health program provided separate privies for boys and girls — and that was it. A "feeble-minded" boy or girl was taught what he or she could learn, sent off to a state school, or ignored, according to the mores of the community. The child with defective sight or hearing was left to the mercy and wisdom of its parents, without any "interference" from the teacher.

Then, as medical knowledge increased, and as cities grew larger and more crowded it became apparent that the school itself was going to have to take more responsibility for the prevention of disease during an epidemic. The guide book which governs school administrators in the operation of their school health programs even today contains passages giving directions as to how long a child with a communicable disease must remain out of school. Some physicians now regard these directions as out of date, and say they should be changed, allowing the child to return to school sooner because modern drugs have lessened the chance of infecting other children. The emphasis on the prevention of the spread of communicable disease was the basic guiding principle for all school health programs until a few years ago.

But now economic conditions and other environmental factors have been much improved. Nearly all children wear shoes to school, so are less likely to have hookworm or skin infection of the feet. Their diet is much better than that of 30 years ago. But, with so many mothers working, with family life and discipline a less powerful factor in child development, the emphasis has switched toward more attention to mental and emotional stability, the correction of remediable defects and prevention of accidents. This latter concept



The health service program of Florida schools includes immunization and physical examinations. School and health authorities recommend complete physical examination and immunization prior to entering school and periodical medical check-ups throughout school life, preferably by the family physician.

involves much more than the mere provision of handrails and fire escapes. It encompasses the whole field of environmental safety, including good lighting, heating, air conditioning, ventilation, non-slip floors, contour seats and splinterless desks.

Primary emphasis in the school health program today is placed on the **determination** of the state of the child's health and the **identification** of his problem. Before the child enters school for the first time, the family is urged by most schools in the state to have him immunized against diphtheria, pertussis (whooping cough), tetanus (lockjaw), polio and smallpox. Many schools do all they can to get the parents to have their physician give the child a complete physical examination prior to school opening.

**All such immunizations should have been given to a child when he is an infant (when there is the greatest danger) and all he should need before he goes to school are boosters. Also, he should have been seen by his family physician at regular intervals since birth.**

Then, beginning in the first grade, the children are given a series of **screenings** — that is, a series of preliminary group tests to determine if further professional examinations are necessary. These tests are made for sight, hearing and dental defects, and the children are watched to detect any sign of mental or emotional abnormality. Their height and weight are measured and recorded, in some cases three times a year, and intelligence tests are given to determine the mental aptitude of those who are apparently within the range of normal intelligence. The teacher is also encouraged to listen for any speech difficulty a child may have and report it.

It must be understood at this point that these are subtle evaluations a busy teacher is asked to make. The child with an outstanding handicap will in all probability have been noticed and screened out of the class of normal children before the teacher ever sees him. A blind, deaf or psychotic child is rarely enrolled in public school. And so it may be the unhappy, the inattentive, the surly, the one without childish energy that may come to the teacher's attention. Then, of course, there is the child who develops a health problem during his school years. The upper grade teachers have their job in the school health program, too. Their task is more difficult because they have the student only for a brief period each day.

Special classes are conducted for exceptional children wherever possible by local Boards of Public Instruction. The word "exceptional" was carefully chosen to describe the children taught in these classes. School authorities point out that the word was not used



Florida's Acting State Health Officer, Albert V. Hardy, M.D., recently said, "There is nothing in science which might have more scientific interest, if properly presented, than information relative to the health sciences. In these modern days when scientific miracle follows miracle, when the conquest of cancer seems almost within our reach, when fantastic new drugs and treatments come from our research scientists in a never-ending stream, when the care of the mentally ill of all ages is undergoing revolutionary changes, it is not exaggerating to say that a career in the medical and health sciences is possibly the most rewarding and exciting life a young person might plan for himself. Such a student will profit from all the basic health education he can get in his early years, and his fellow-students who are planning other careers will benefit from the same education. All will be in a world in which a well-rounded knowledge of health and other sciences is essential for intelligent living."

merely to cover up the backwardness of some children in the classes. It was chosen to indicate that these children are different in some way from the average and need and deserve special attention. Some of them are actually brighter than average, but may have some slight deformity, poor sight or hearing, or difficulty in understanding some subject. Teachers for such classes are chosen for their ability, training and patience. They have helped or "straightened out" many a child who had difficulty in regular classes, and sent him on to make his way normally with other children after a few weeks or months in the class for exceptional children.

### **Health Instruction**

General health instruction should be given to school children throughout most of their school years. For example, in the lowest grades they are taught with simple pictures and charts that they should eat a balanced diet and what this should contain. The teachers of the lower grades are aware, of course, that the smaller child has little to say about the diet served at home, but the principles of good nutrition are taught, and the child is given a chance to compare what he is taught with what he is served at home and in the school cafeteria. As he reaches higher grades, and often has his own money to spend, teachers can reinforce the value of a balanced diet.

There is an ideal opportunity for teaching health as a part of

certain science courses. Health science can be made a fascinating and yet very practical study. Young people are hungry for factual information that will lead them to a better understanding of their own growth and development. The study of human anatomy and physiology is a proper part of biological science. Recent consideration of biological textbooks for state adoption calls for special emphasis on health science. Teachers should be encouraged to make their best effort in this phase of their instruction.

Health and safety education belong in the secondary school curriculum. Neither the home nor the community agencies can do a job without concerted efforts by schools in effecting a healthier, happier and safer citizenry. These subjects deserve positive credit toward promotion, graduation and college credit. It is possible that the names for these subjects should be termed "health science" and "safety science" for better acceptance. There is no quarrel with the thinking that students should know the essentials of atomic energy and mathematical formulas, and some of these students will become productive scientists and engineers. But **all** of them will **live** in a generation where sound **health** and **protective safety** represent necessary qualities to **personal** and **social welfare**.

The girls learn good meal planning from their home economics teachers, and the boys often are found to pay attention to the athletic coaches' ideas of good eating habits. Similar instruction may be given in personal hygiene, care of teeth, importance of good posture and grooming, and other health subjects. Films and displays are shown the students, and class "projects" are often carried out. Outside speakers may contribute some special information. Health authorities, however, feel that not enough health education — specific classroom instruction on health subjects — is given in the average school today. They believe that definite programs to develop the body should be carried out along with those designed to develop the mind. The prevention of disease and the goal of optimum health is just as important as the latest information in space-age technology, for a sickly scientist is not much good to any program!

Sanitation and safety are both taught and practiced in a well-run school. This is done more by admonition and example than by formal classroom procedures, though these are also used. A child cannot go to a clean school for six or eight years and not learn to note the difference if his own home is unclean or untidy.

### **Sickness In School**

One problem which school authorities have always had to handle

with care and wisdom is that of the sick or injured child at school. Such a child must of course be placed in the care of his parents as soon as possible. However, an emergency reference card is necessary for the principal's pupil files. This card will designate the physician and/or hospital to which a severely injured child may be taken directly from the school. The parent must make these necessary arrangements at the beginning of the school year.

Emergency care is provided in various ways when a child is obviously not seriously ill or hurt. The Gray Ladies (see **Florida Health Notes**, March 1960) have been of inestimable help in a number of Florida's schools. They are trained in classes taught by the Red Cross, work under standing orders approved by the local medical society and cooperate with their County Health Department. They volunteer for a specified number of hours each week in the operation of a first aid service at a school. They can give no medicine, but they can give a scratched knee a good washing with soap and water, a band-aid and a loving pat. They are trained to act coolly if something serious comes up and get in touch with parents quickly — most of them are mothers, too. Where there are no Gray Ladies in attendance, the principal, with teachers' help, performs these same functions. And parents may rest assured that if the child is seriously ill or hurt and the parents cannot be located, the school would do precisely what common sense would demand — call a doctor or an ambulance and give first aid until help arrived.

**It may be pointed out here that a registered nurse is rarely needed for day-long service at a public school. School children are generally a healthy lot, and there simply is no need for a nurse to give care an adult with a minimum of instruction and know-how can offer. For after all, even a registered nurse is not allowed to diagnose, or give medicine unless she has specific orders from a physician.**

A health record of every child is supposed to be kept throughout the child's entire school life, along with his academic record. This record is started when he enters the first grade. Congenital defects are noted. From then on, year after year, the record shows when he was screened for sight and hearing defects, the increase in height and weight, accidents, absences for childhood diseases, participation in school athletic events, immunization boosters, surgery and seeming "deviations from the norm." These records are regarded as con-

fidential but naturally are discussed with his parents. Some school systems send the child's health record to the family's private physician when he makes his examinations. The health record is just as important as the academic record and is supposed to be transferred with that record when the child changes schools.

### Help From Many Sources

For the child whose parents cannot afford to pay for certain health services that are needed, there is always help available. If the needed service is smething simple like protetive inoculations, the County Health Department can usually provide these or arrange with a local physician to give them. This is true also where a child needs a physical or dental examination. Many counties have child guidance or mental health clinics where a child may be given diagnostic services, counseled with his family, and in some cases undergo treatment. Those counties without such a clinic of their own usually use the clinic services of an adjoining county. Mobile dental clinics for both races are constantly on the move, going from county to county and school to school, giving dental examination and treatment to needy children. Where specific treatment or equipment, such as braces for limbs or teeth, eye glasses, or orthopedic appliances must be provided, a way can always be found, either through a state agency or a voluntary organization.

Those official or tax-supported agencies assisting with the school health program include: The Crippled Children's Commission, The Children's Commission, Florida Council for the Blind, School for the Deaf and Blind at St. Augustine, Sunland Training Centers at Gainesville, Orlando and Fort Myers, and Child Guidance and Mental Health Clinics. Florida has 30 of these, 17 of which are assisted with state funds.

According to one State Board of Health official, "The contributions of the voluntary health organizations to the school health program alone would more than fill an issue of **Health Notes**." We are therefore forced by lack of space rather than lack of appreciation to forego a listing of these contributions "without which the school health program of Florida would falter and stumble." But all of these agencies — the tax-supported activities at federal, state and local levels, and the **dozens** of voluntary groups that contribute so much — must be considered as serving in an **auxiliary** capacity in the school health program. The daily work — the **routine pro-**



gram — is carried on by the staff of the County Health Departments and the local Boards of Public Instruction. The State Board of Health and the State Department of Education might be likened to counselors and advisors who do everything they can to cooperate, on a state basis, and thus serve as an example to their local counterparts in Florida's 67 counties.

### The Latest Note

The President of the United States has told the schools, "The strength of our democracy is no greater than the collective well-being of our people. The vigor of our country is no stronger than the vitality and will of all our countrymen. The level of physical, mental, moral, and spiritual fitness of every American citizen must be our constant concern."

The President's Council on Youth Fitness indicates that "physical fitness itself is a broad quality involving medical and dental supervision and care, immunization and other protection against disease, proper nutrition, adequate rest, relaxation, good health practices, sanitation, and other aspects of healthful living. Exercise is an essential element to achieving physical fitness."

Since it is impossible to achieve fitness without good health, our schools should continue to emphasize and improve school health programs. These health programs should complement health services provided by the home, the family physician and dentist and community agencies. High governmental officials have made an urgent appeal to school authorities to examine their programs which contribute to the improvement of the physical fitness of youth and make every effort to bring about greater benefits to the students.

It is obvious that the effort to improve physical fitness of American youth is based on achieving the best possible health. It seems clear that physical fitness is a basic objective of physical education which is a very important part of a well-rounded health program.

It is important to have a properly planned and supervised daily program of vigorous physical exercise designed to replace the activity lost when children began to ride to and from school and sit in front of the television set much of the rest of the day. Medical authorities agree that the process of growing strong, healthy bodies requires plenty of activity and that modern living tends to lead the other way.



Early in 1962 a national campaign was begun with leadership from the White House to urge school authorities to examine their physical fitness program and to improve it if need be. It was said that this need not lead to a large outlay of cash for gym and playground equipment — that the supervised use of running and calisthenics would serve the purpose.



### *All Is Not Rosy-*

There are as many different kinds of school health programs as there are counties in Florida. Excellent, good, mediocre, indifferent — you can find all kinds.

- County Health Departments and local Boards of Public Instruction should plan **together, before** the school year begins.

- School health records should be kept on every child and be easily available to the public health nurse and teacher — and kept up-to-date.

- Every parent should obtain his child's birth certificate long before he is ready to go to school. He will have to present it.

- The community — physicians, dentists, nurses, civic clubs, P-TAs, etc. — should be concerned with the school health program.

- The teaching of health is a **must** and our teachers should be prepared to teach the latest scientific facts and feel an obligation to do so.

- Teachers should know all the available resources in their community for doing a better job of teaching health. Hence, the Teachers' Project.

**WHAT KIND OF A SCHOOL HEALTH PROGRAM DOES YOUR COMMUNITY HAVE?**

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All counties in Florida have organized County Health Departments

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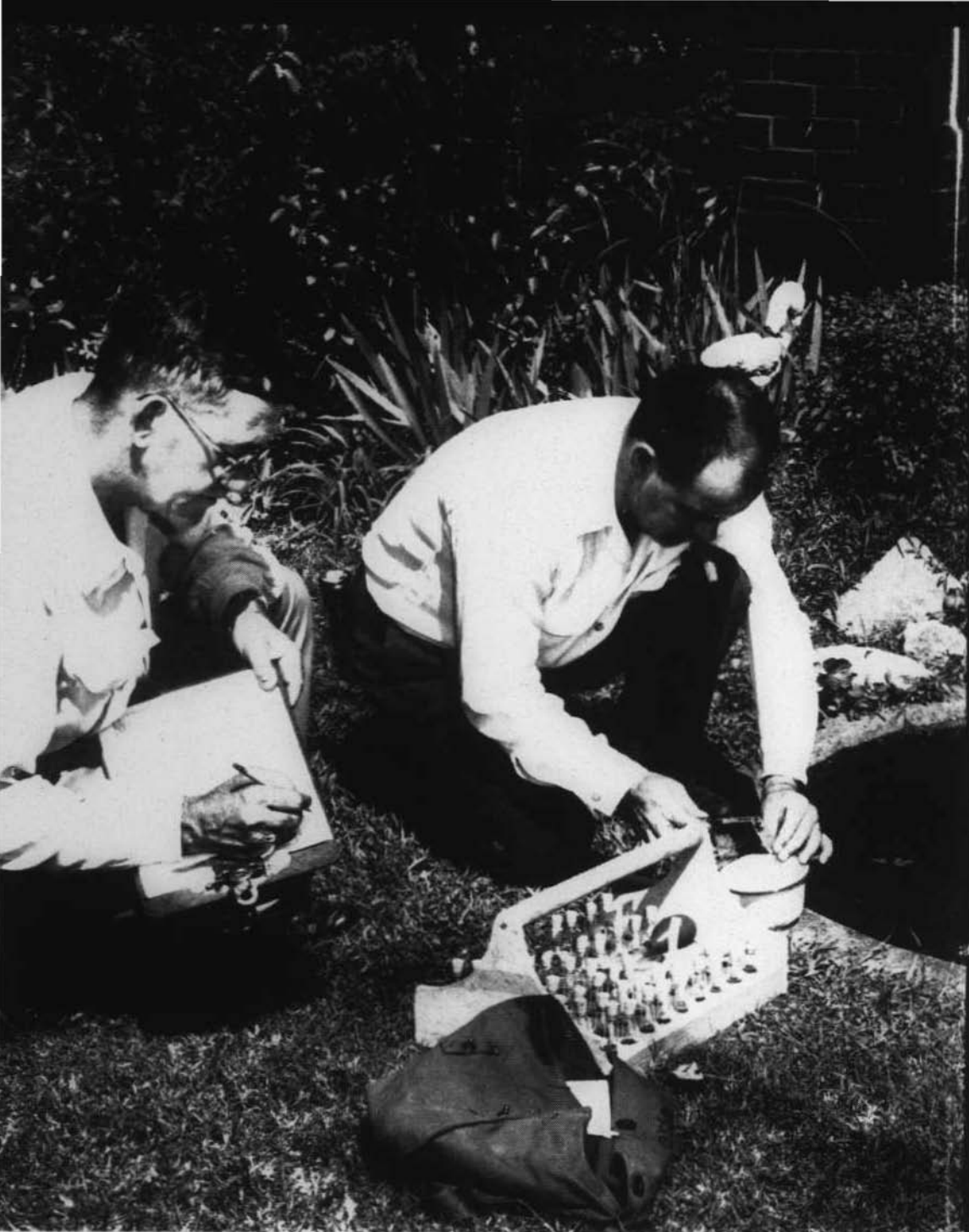
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HN 12-51







Garden pools are one of the many places where encephalitis-bearing mosquitoes can breed around the home. From such sites scientists collect larvae for study in the laboratories.





# ENCEPHALITIS

SOMEONE has said that as fast as you get one public health problem licked, another rises to take its place. And so it is with diseases carried by mosquitoes. Yellow fever, malaria, dengue fever once caused great epidemics and loss of life in Florida. No more—they are gone, though the State Board of Health keeps constant watch to see that these diseases are not again introduced into our state.

So what do we have now? A new arthropod - borne disease

(an arthropod is an animal, such as a mosquito or tick) called *encephalitis*. There are several kinds of *encephalitis* for which there is no known vaccine or cure. But there is a possibility of control—this is where you come into the picture.

At the time of the writing of this issue of *Health Notes* (September 1962) there is an outbreak of St. Louis *encephalitis* in Pinellas County. A number of suspected cases have been reported to date with several

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## FLORIDA HEALTH NOTES

Published monthly except July and August on the 5th of the month by the Florida State Board of Health. Publication office Jacksonville, Florida, headquarters of the State Board of Health. Entered as second class matter, October 27, 1924, at post office, Jacksonville, Florida, Act of August 24, 1912. It is intended primarily for individuals and institutions with an interest in the state health program, public and private. Permission is given to quote any story. Clipping of quotations or excerpts would be appreciated.

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Encephalitis is not contagious. It cannot be spread from person to person. It can be contracted by being bitten by an infected mosquito, which generally bites at dusk or in the night. If persons remain indoors in screened houses at night, they can minimize the chance of being bitten and thus possibly catching the disease. All persons who must be out after dark in areas where mosquitoes are present should always use a mosquito repellent. Where there is one mosquito in the home an insect bomb should be used to destroy any mosquitoes present.

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deaths, all in persons over 65 years of age. How is this "sleeping sickness" spread? Apparently by certain species of mosquitoes which feed on infected birds. How can these mosquitoes be controlled? What can you do as a citizen? But, wait! Let's learn more about this disease.

#### *What is Encephalitis?*

There are three main types of encephalitis in Florida which affect humans—Eastern, Western, and St. Louis. They are produced by different viruses but all produce similar symptoms and illnesses. Minor types of encephalitis viruses are also present. They are Highland-J, West Nile and Ilheus.

For many years, encephalitis (inflammation of the brain) was known in Florida as a disease that caused death in horses. Called "blind staggers," infection with Eastern Encephalitis

(EE) causes a horse to walk in circles while crossing his front legs, to stagger blindly with the head drooping and to bump into a fence or post. If pushed to walk straight ahead, the animal falls to the ground and exhibits walking movements while down. Death occurs within 48 to 72 hours after the onset of symptoms.

*Symptoms in humans start with an uneasy feeling, weakness, nausea and chilly sensations. These are followed by severe headaches, high fever, mental confusion, drowsiness and occasionally, convulsions. Advanced symptoms are tremors of legs and arms, tongue and face and abnormal reflexes. Early symptoms are easily confused with other illnesses, making it difficult to diagnose encephalitis in its early stages.*

The number of cases in horses

have always increased during June and July, a pattern which did not change in 30 years of study by Florida veterinarians. Although the disease has been reported in all but two of Florida's 67 counties, the majority of cases occurred in the fresh-water region of Central Florida. However, a vaccine has been developed against EE and the 50 to 100 cases that occur annually in the state are those where the owner or the veterinarian failed to have the horse immunized.

While EE is mainly an animal disease, about 100 cases of EE have been reported in man in the United States since 1938. Florida occasionally has a case or two of this disease confirmed.

In humans, EE is fatal in about 60 per cent of the cases and in horses it kills about 90 per cent. The St. Louis virus is less virulent but no age is exempt with the highest incidence in persons from 15 to 50 years of age. From five to 30 per cent of those contracting the disease die, and the percentage increases directly with age.

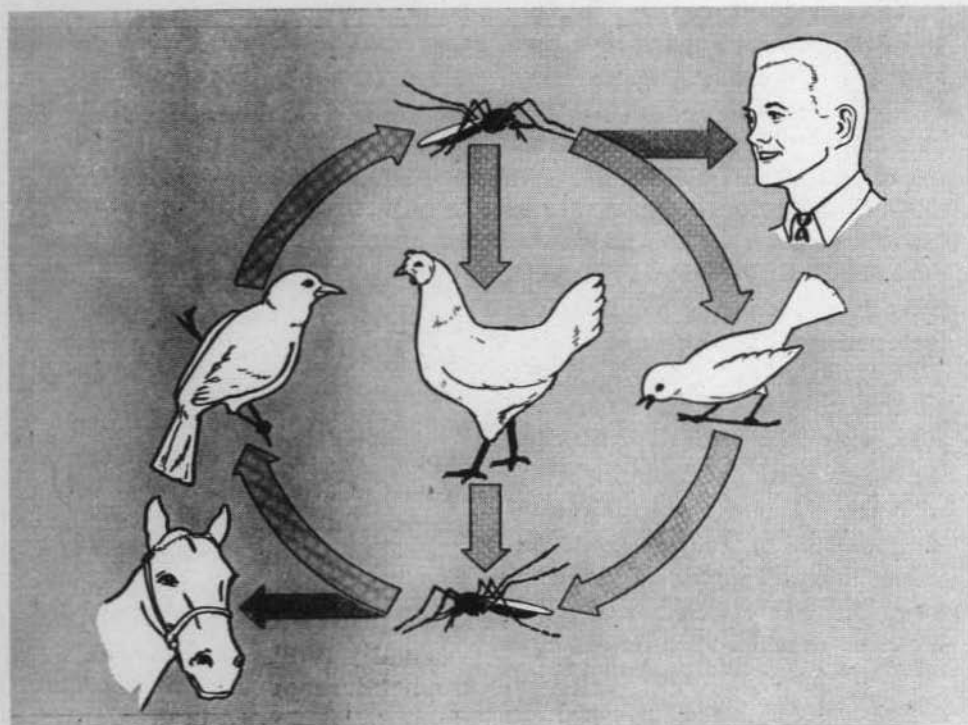
One reason why the State Board of Health is so concerned about the disease in human beings is that even when it is not fatal it may bring tragedy in permanent brain damage, neurological disorder and mental retardation. Individuals who survive EE seldom make a com-

plete recovery. They are frequently left paralyzed with brain damage. Those who survive St. Louis encephalitis often find they have a gap in their memory usually from the time they were taken ill to the recovery period.

#### *Case History*

A few cases of viral encephalitis had been reported in Florida prior to 1959 but on June 3 of that year, a single case of encephalitis in Pinellas County drew the attention of health officials. But a single case does not make an epidemic. By the end of July, however, more cases had been reported and gradually built up to a peak by the beginning of September. The Communicable Disease Center in Atlanta (a part of the U. S. Public Health Service) became interested and joined the State Board of Health and the Pinellas County Health Department in seeking information as to the cause and source of the disease.

A total of 68 cases were clinically confirmed before the outbreak ended. Because of the general urban distribution, the high attack rate among the elderly, the absence of infant cases, the relatively small number of deaths, and the absence of known vectors (transmitters) of EE, it was decided that the epidemic was St. Louis encephalitis. It is also known that this



Encephalitis, sometimes called sleeping sickness, is a viral disease normally transmitted from bird to bird by mosquitoes. When a man or a horse is bitten by a virus-carrying mosquito they become ill and sometimes die.

disease occurs most frequently during the summer and fall months.

An intensive search in the area detected no unusual illness among animals, wild birds or domestic fowls, which might be infected agents. Attempts to isolate the viral agent from specimens, such as human stool, blood, brain and spinal fluid, blood from birds and five mosquito pools failed.

#### *A Second Outbreak*

For nearly two years thereafter there were no reported cases of encephalitis caused by mosquito-borne viruses. Then... a severe die-off of a flock of pheasants in Brevard County in 1961 started an investigation by a State Board of Health laboratory team. The collecting of wild and domestic birds, small animals and mosquitoes got underway. The EE virus was found in the blood of eight pheasants

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## AN OLD SONG — FIRST VERSE

When statehood for Florida was debated in Congress over a century ago, the question was raised: Is Florida a fit place to live because of "swamps, quagmires, frogs, alligators and mosquitoes?" Florida joined the Union; swamps and quagmires are disappearing from the scene, frogs and alligators are vanishing but the mosquito is still here.

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and a bluejay. A study of humans and large animals in the surrounding area was carried out but the results were negative.

An unusual number of human encephalitis cases were reported in the Tampa Bay area from October through early December of 1961. Twenty-five cases occurred with seven deaths. Six of the cases were in Sarasota County, 10 in Manatee and nine in Pinellas County. Blood samples from the majority of the victims were sent to the laboratory of the State Board of Health and 13 of them proved positive for St. Louis encephalitis. Four of the fatal cases were autopsied and all of them revealed the typical pathological findings of acute viral encephalitis.

It is interesting to note that all of those who contracted the disease were white. Fifteen were female and 13 were over the age of 65. The youngest was a 13-year-old male.

A typical case is of a man who was retired and lived with his wife in a trailer court. His hobby was gardening and like a majority of persons who had encephalitis, he had surrounded his home with shrubs and potted plants.

One day the man became nauseated and at times chilly. The second day he developed a severe headache and a high-grade fever and before the day was over he became mentally confused. The third day of his illness he became drowsy and had convulsions. A physician was called who ordered the man taken to the hospital. Subsequent tests proved that he had St. Louis encephalitis.

When the wife was questioned by staff members from the County Health Department, she recalled that her husband had complained of mosquito bites a few days before he was taken ill. A Board of Health team found a number of mosquito-breeding sites around the trailer



home, such as water standing in plant dishes, the bird bath and tin cans.

The man recovered but suffered brain damage which left him temporarily physically and mentally disabled.

Inquiries by the investigating team turned up the fact that all of the victims could remember occurrences of insect bites prior to the illness. The scientists inspected the premises of 13 of the households, including several trailer parks and found breeding sites for mosquitoes on all of the properties.

Spraying for mosquitoes had been discontinued in Pinellas, Manatee and Sarasota Counties approximately two months before the outbreak of encephalitis because of the lack of rainfall, the lack of mosquito-biting complaints and low catches of mosquitoes by the Mosquito Control Districts. Such districts are areas organized for the purpose of fighting the mosquito and the work is financed by taxpayers and the state.

Seven of the nine cases in the St. Petersburg area occurred near a lake and a city park zoo. The research team found animals in the zoo that had developed antibodies, a sign that they had been infected with encephalitis in the past. The animals possibly had been infected by mosquitoes from the nearby lake and the mosquitoes had got-

ten their infection from birds.

### *Discovery*

Since the persons with encephalitis were concentrated in the same rough geographic area, the research scientists started looking for both the hosts and the vectors of the virus—the animals who carry the disease in their bodies and the arthropods who pass it on.

Domestic chicken flocks on the premises of two of the households which were affected were found to have had recent infections of St. Louis encephalitis. Mosquito traps placed in the area brought in three kinds of mosquitoes found most frequently and these were tested in chicks and suckling mice. One pool of mixed *Culex* mosquitoes produced a virus identified in the Virology Laboratory of the State Board of Health as being the type that infected the birds and humans tested.

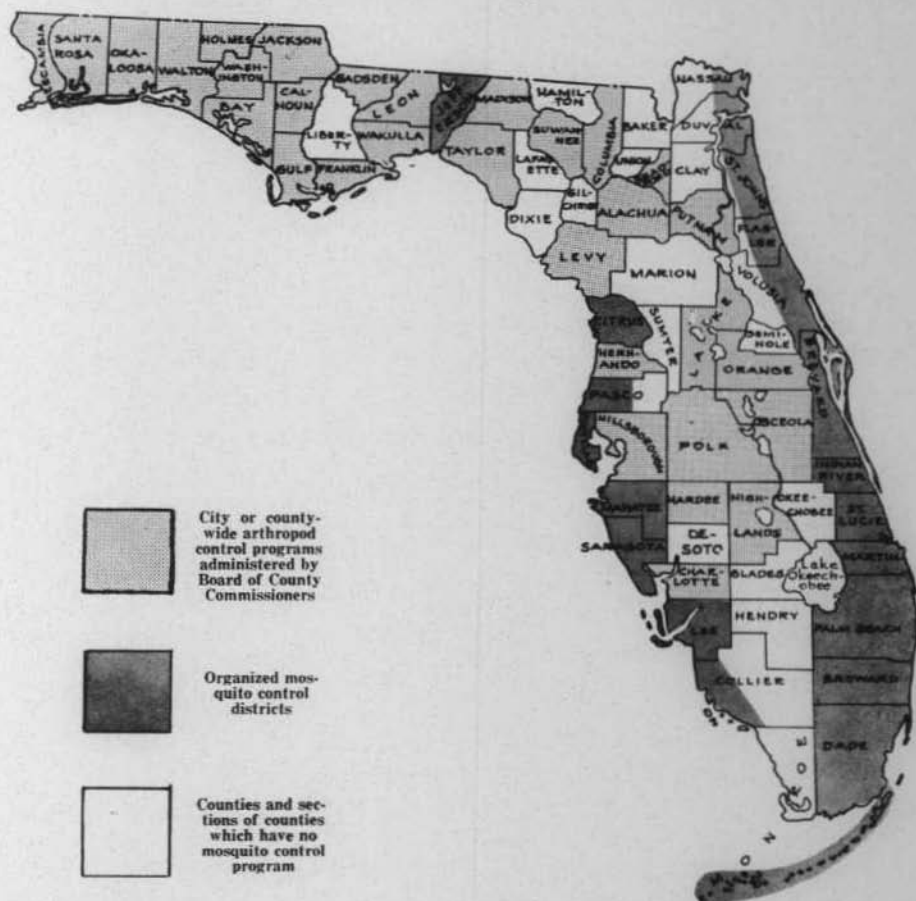
### *An All-Out War*

When the State Board of Health laboratories felt they had sufficient proof that the *Culex* mosquito was a carrier of St. Louis encephalitis, the Board's Bureau of Entomology and the three adjacent Mosquito Control Districts marshalled forces to stage an all-out war.

First of all, since the suspect mosquitoes are found mostly around the home, citizens were urged to empty all containers

# Mosquito Control

## Areas of Activity in Flordia



frequently that might hold water and thereby breed mosquitoes. Fogging by truck-borne equipment was stepped up. A mixture of Malathion, Lithane 384 and diesel oil was used to produce a deadly dense fog to

kill adult mosquitoes. Night and day the battle continued until citizens became accustomed to the hissing of fog trucks.

In the meantime, other men were busy placing oil and Paris green pellets in roadside ditches.

ponds and other areas where the larvae could be killed. Another chemical mixture, a herbicide, was used to kill the vegetation in marshy, swamp areas to allow the minnows that inhabit such areas to get to the mosquito larvae and eat them.

### *The Mosquito's Role*

What part does the mosquito play in the spreading of encephalitis? The scientists of the State Board of Health's Entomological Research Center at Vero Beach are busy prying into the private life of the female in-

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## SAME OLD SONG — SECOND VERSE

When Florida was a brand-new state, vast areas of the land were uninhabitable because of mosquitoes. The Seminoles and "crackers" practiced good housekeeping to keep away the pests. They built their homes on dry terrain—away from salt water. Their homes were open to the wind and sun and the clearings around their homes were kept cleared of brush, rubbish and water-holding containers. The Seminoles constructed their chickees with a thatched roof and a floor about a foot off the ground.

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sect (the one who bites you). They want to know where she goes and what she is doing—when she is not feasting on your blood. They know what she does only a few minutes of the time. The other 90 per cent of her life could be very intriguing and if the activities of the mosquito were known, it might be easier to destroy her.

The scientists know much about the egg, larva or wiggler, and the pupa stages of the mosquito. They know the various patterns in which the different kinds of mosquitoes lay their eggs; they know how the larva develops into the pupa. Once the adult mosquito has taken wing, it is difficult to trace her activi-

ties—or even the length of her life. Some of the species in the warmer climate live perhaps a few weeks. Other species of mosquitoes in Florida breed the year around, hibernating in the cooler months and emerging during the warmer periods. A series of prolonged cold periods greatly retard the activities of certain Florida mosquito species.

The mosquito is well equipped to do her work. She has a pair of cutting tools, the mandible and the maxillae. After making an opening she inserts two organs, the hypopharynx and labrum - epipharynx, which are pressed together to make her drinking tube. When she bites you, she injects a secretion from

her salivary glands. This secretion keeps the blood from coagulating in her drinking tube, but it also carries any virus she may have in her salivary glands and injects it into your body. It is only a minute drop of fluid but it starts you scratching.

### *The Cycle of the Virus*

Not all kinds of mosquitoes are transmitters of viruses. Not all mosquitoes even need blood to reproduce eggs. But certain species of the genus *Culex* carry encephalitis from one bird to another, from a bird to a horse, or from a bird to man. The genus *Culiseta* is believed to transmit the virus from bird to bird only.

Birds, migrating from Florida to the rain forests of Central and South America and back to Florida, are also believed to be carriers of the virus from place to

place. These wild creatures also may carry it from one state to another. Small birds and domestic fowls may serve as hosts, often carrying the disease for a time but never having more than a slight elevation in temperature. Most of them never show any signs of sickness.

Normally, the infection chain is limited to birds and mosquitoes. Under certain conditions, such as high prevailing temperatures and high rate of virus infection among an abundance of the bird population, the virus spills over to horses, humans and other mammals. Man and the larger animals are incidental dead-end hosts of encephalitis. That is they do not spread the disease to other men or large animals.

A large population of susceptible birds and the proper mos-

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### REPEAT THE SAME SONG — THIRD VERSE

Once feared, yellow fever lives only in the memory of those who have to be immunized before leaving the country. Malaria disappeared after the epidemic of 1937, and dengue fever, often called "breakbone fever," was banished following an epidemic in 1932.

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quito in the same vicinity as man sets the stage for an explosive outbreak of encephalitis. Such a situation occurred in Pinellas County in 1959 and in 1961.

So—the mosquito bites an infected bird, takes the virus into

her digestive system where it continues to develop—and then infects her next victim—another bird, a horse or a man.

Birds appear to be the ideal natural hosts because they are prolific and short-lived. There is a rapid turnover of bird popula-



A female mosquito, which dwells in a laboratory's glass chimney, takes a blood meal from the arm of a scientist. It is this kind of feast that the pest needs to mature her eggs.

tion each year with large numbers of newly susceptible birds. Smaller birds and nestlings often have high levels of virus in their blood and they are probably more important than the larger and older birds in the transmission cycle.

One major problem that confronts the scientists of the State Board of Health is how do the viruses maintain themselves during the winter or nonepidemic months? Are the viruses harbored for long periods in the mosquito or do they remain as latent (quiet) infections in the birds?

Where can the cycle be broken? Unlike yellow fever, there is a ready reservoir of encephalitis viruses in birds ready to spread to man but a mosquito can carry yellow fever, malaria and dengue, only when she has a person with any of those diseases to bite.

#### *Eliminating the Mosquito*

Nearly everyone who has lived in Florida for any length of time is familiar with efforts to wipe out mosquitoes (and nearly everyone has his own idea on how this should be done!) When a mosquito-borne disease occurs,



people's first reaction is: Spray and fog! But spraying only kills the adult mosquito. What about the early stages, the pupae and the larvae?

The actual work of controlling the pest is carried by 54 Mosquito Control Districts and County Health Departments which spent more than \$5 million during the past year under the supervision of the State Board of Health's Bureau of Entomology. Their *permanent control measures* include the filling of low areas, cisterns, cesspools and wells; ditching to eliminate breeding places; diking and flooding of swamps; dredging and deepening of ditches; and vertical drilling to drain off surface water.

*Temporary control measures* include fogging by airplanes and truck, the placing of larvicide pellets in swamps and ditches, and the elimination of underwater plants, which aid in the development of the mosquito larvae.

Anti-mosquito work has as its major aim the *controlling* or *destroying* of mosquitoes which

transmit disease. The elimination of the annoying pest mosquito which sometimes does not bite is another aspect of the problem. While the former is regarded as the more important, the pest mosquito can affect the mental and physical health of persons he annoys and has a direct influence on economic loss by the reduction of property value, the expenses of protective measures (screens, repellents, etc.), and injury to livestock.

An example of the latter:

When the rains came in the spring of 1962 following an extensive drought, the swales of the Everglades filled with water. Mosquito eggs that had been laid in small holes or depressions hatched in the rising water. Swarm after swarm of mosquitoes flew out of the swamp areas attacking cattle on the ranches of Lee and Collier Counties. Cattle lost weight because of the suffering inflicted by the mosquito. Young calves as well as adult animals died from loss of blood and from suffocation when

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## THE CHORUS

The State Board of Health, the Mosquito Control Districts and the County Health Departments carry on the battle against the mosquito in the laboratory and in the field. Research is carried on by noted scientists at the Entomological Research Center at Vero Beach. *We're doing all we can. Now you must do your part.*

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mosquitoes blocked their nostrils.

It goes without saying that our tourists also rely upon the work of the State Board of Health, the County Health Departments and the Mosquito Control Districts to check all mosquitoes and the diseases they might transmit.

#### *What the Future Holds*

Encephalitis is not retreating. Epidemiologists are predicting that possibly the greatest outbreak of human encephalitis lies in the future.

Why? There is a lack of knowledge on how to cure the disease and there is no way of warning when another epidemic may break out. There is no vaccine for humans. There is a vast reservoir of birds to carry the infection from one place to another. Man's building activities have aided in the breeding of mosquitoes. One example is of an attempt to beautify a large, exclusive development in South Florida. Residents of the area complained to the County Health Department that they were being plagued by mosquitoes. An investigation revealed that builders of the development had moved a number of large palms from nearby swamp areas to line the approach to the beautiful homes. The developers failed to fill in the holes left by the removal of the trees; water col-

lected in the holes; and the development had its own private breeding site for mosquitoes.

#### *What Can Be Done*

The State Board of Health will do its part. It is constantly studying mosquito control. It is cooperating with all other agencies in this tremendous task. For example, in the St. Petersburg area, it is working with the Pinellas County Health Department and the local Mosquito Control Districts to control that immediate situation. It works with all of the 67 County Health Departments and the 54 Mosquito Control Districts in this fashion. It stays constantly on the alert to detect and ferret out new challenges to Florida's health.

#### *AND WHAT CAN YOU DO?*

*To combat mosquitoes around your home, remove all rubbish and water-collecting containers, such as tin cans, bottles and buckets; keep rain gutters cleared; drain and wash out bird baths once a week; spray shrubs and potted plants with insecticides that will dissolve in water; spray garage interiors with residual spray—such as DDT or Lindane; and spray around entrances and screens with five per cent DDT or five per cent Malathion. You may be breeding the mosquitoes that may be the cause of placing you in a hospital or cause a death in your family from encephalitis.*

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All counties in Florida have organized County Health Departments

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# FLORIDA HEALTH NOTES

VOLUME 54 — NO. 9

NOVEMBER 1962

**ALCOHOLICS**  
*Florida's 150,000*





**ONE  
IN EVERY  
SIXTEEN PERSONS  
WHO DRINK  
WILL BECOME  
AN ALCOHOLIC**



**THERE ARE FIVE  
MALE ALCOHOLICS  
FOR EVERY  
WOMAN ALCOHOLIC**

**BUT...**

**THE NUMBER OF WOMEN ALCOHOLICS  
IS INCREASING FASTER THAN THE  
NUMBER OF MALE ALCOHOLICS**

.....

# Alcoholics

## DO YOU KNOW ANY OF THESE PEOPLE?

**Sue**—a young woman who had good looks and a promising future as a legal stenographer until she developed an uncontrollable craving for alcohol. She spends much of her time in bars and taverns.

**Mary**—the young suburban wife who often neglects her children when she is drinking. When her husband leaves home for work, she sends her oldest children off to school, puts the youngest in a playpen in the back yard and finds comfort in a bottle. She usually attempts to quit drinking early in the afternoon in order to be sober when her husband returns, but frequently she is in bed with "a sick headache" when he arrives.

**Peter and Sarah**—the lively couple on the next block who pride themselves on their frequent parties, which often turn into drinking bouts. Their children stay with neighbors while their parents sober up.

**Joe**—whose persistent bouts with alcohol have cost him every good job he has had in the past 10 years. His wife is a completely discouraged woman. Their children are emotionally unstable and have many problems.

**Laura**—wife of a prominent businessman, whose children have grown up and left home. Her husband is engrossed in his business and clubs. She drinks alone and has become careless. Last week she left a kitchen towel on a stove burner. It caught fire. Damage to the kitchen: \$100.

**Sam**—60 years old, unemployed and has no family. He is unable to keep a job and hangs around bars bumming drinks. He is a frequent inmate of the local jail.

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### FLORIDA HEALTH NOTES

Published monthly except July and August on the 5th of the month by the Florida State Board of Health. Publication office, Jacksonville, Florida, headquarters of the State Board of Health. Entered as second class matter, October 27, 1921, at post office, Jacksonville, Florida, Act of August 24, 1912. It is intended primarily for individuals and institutions with interest in the state health program, public and private. Permission is given to quote any story. Clipping of quotations or excerpts would be appreciated.

Any illness which affects the health of approximately three per cent of the population; causes misery for another six or 12 per cent; and costs Florida business and industry an estimated \$21 million a year, must be a major concern of society. The State Board of Health has long been a leader in recognizing serious health problems and crystallizing public opinion around a constructive plan of prevention and education. The problem of alcoholism calls for the cooperative action of all who are interested in this tragic situation.

**B**EHIND the good and pleasant life in our Sunshine State the problem of alcoholism presents one of the biggest challenges in the public health field today. It is not Florida's problem alone but is a national and worldwide malady.

The alcoholics in our midst are largely responsible for huge expenditures of public and private funds for aid to dependent children, for the payment of the cost of numerous accidents on the state's highways and for the enormous high costs to industry due to loss of man hours. Alcoholism is responsible for countless broken homes, divorces, neglected children, crime, the necessity of larger police enforcement agencies and many of the patients in mental institutions.

One Floridian in 16 who drinks will become an alcoholic. Business and industry in the state loses an estimated \$21 million a year due to its 42,000 alcoholic workers. It is a fact that alcoholism is such a major problem that it has outgrown the understanding of the average individual.

Anyone who makes the rounds of the courts, jails, hospitals, clinics, welfare and social agencies in any city, will see examples of the physical, social and mental breakdown alcoholism can bring in its advanced stages.

An estimated 150,000 Floridians are alcoholics—enough persons to populate a city almost as big as St. Petersburg. If 500 cases of typhoid fever were to develop in Florida, dozens of official and voluntary health organizations would mobilize to fight the epidemic. There are 300 times as many cases of alcoholics, but there is no mass mobilization against this illness.

Yet there is an increasing evidence that many forces are start-

ing to combine their efforts, largely as a result of a single agency assigned the official responsibility for working toward the control and prevention of alcoholism in Florida—the Florida Alcoholic Rehabilitation Program (ARP). This agency cooperates with all official and voluntary agencies in combating the public health problem of alcoholism. Because of the work of the ARP and the interest of the State Board of Health in this tremendous problem, we are dedicating this issue of **Health Notes** to the fight against alcoholism.

### **What is Alcoholism?**

Alcoholism, one of Florida's major public health problems, is defined by the ARP as: "A chronic, complex illness which affects behavior and is related to psychological disturbances. It is typified by uncontrolled, excessive drinking."

The alcoholic uses alcohol for different reasons. He may use alcohol to escape reality. Usually he suffers from a personality disorder and cannot accept himself as a real person in an authentic world. He uses alcohol to create a world of his own. In the early stages of the illness, this world can be a comfortable place. In it, the alcoholic can be a big shot, a big spender, a "brain," the life of the party—anything he wants to be, because he has the power of alcohol to make his own world.

This false world becomes so comfortable to him that he soon finds himself spending more time there. As he progresses to chronic alcoholism, his world of fantasy gradually becomes a dwelling place of dulled solitude, where he can exist without thinking, feeling or knowing. In this way, he can temporarily solve or escape all problems. Although his drinking may cause serious concern to his family, it is not a problem to the alcoholic. **It is his solution to a problem.**

Until recent years, however, alcoholics were not considered to be suffering from an illness. They were "weak-willed degenerates who could control their drinking if they wished." They were criminals and outcasts. Mostly, they were ignored as unmentionable blights on society.

Alcoholics Anonymous (AA) was the first organization to demonstrate on a large scale that something could be done for alcoholism. This unique society of alcoholics seeking sobriety proved alcoholics could **help each other to recover**. With the example of AA before them, and with the preliminary findings of open-minded research organizations which were beginning to look into alcoholism,



other interested persons soon began pressing for official recognition of the problem.

### **State Action**

In the past two decades, health officials and the medical profession have recognized alcoholism as an illness. As a result of growing interest in the problem, the first state agencies designed to treat alcoholics opened their doors, and other states soon followed suit with varying slants in treatment and help for the alcoholic. In 1953, Florida acknowledged responsibility for helping those of its citizens who suffered from alcoholism and the State Legislature of that year enacted the Florida Law on Rehabilitation of Alcoholics, creating the Florida Alcoholic Rehabilitation Program. The ARP is a public health agency which functions in three areas: treatment, education and research.

### **Treatment**

ARP has established outpatient treatment clinics in Miami, Tampa, Jacksonville and Pensacola, and a 64-bed treatment center at Avon Park. These facilities are staffed by a psychiatrist, physician, psychologist and one or more psychiatric social workers. Treatment is centered around group and individual therapy, but takes into account the physical, social and spiritual needs of the patient as well as the underlying personality problems.

During initial contacts with the patient, the staff attempts to learn all they can about him—his psychological make-up, drinking pattern, interpersonal relationships, degree of social adjustment, family problems, job satisfaction, etc. This information is discussed periodically during the frequent meetings of the entire clinical staff at each facility. Together, the staff evaluates each patient's case and decides on a plan of treatment suited to his needs.

The outpatient clinics are considered the ARP's "first line of defense," because they reach out into the community, where the problem occurs. Any alcoholic may voluntarily request help of a clinic, provided he has lived in Florida at least one year. Physicians, ministers, social workers, family and friends—anyone may refer an alcoholic to treatment at an outpatient clinic.

The Alcoholic Rehabilitation Center (ARC) in Avon Park will accept referrals only from physicians or from one of the ARP's outpatient clinics. The Center offers patients a more intensive version of the same type of treatment received at the clinics, with several added benefits. The Center operates on a therapeutic commu-



**The alcoholic becomes a man alone when alcoholism severs his ties with society.**



nity principle, which places the patient in a community setting with other patients, and gives the staff an opportunity to evaluate his or her reactions to the demands and responsibilities of community living. Learning to live effectively within this community may help the patient learn to function better in his own community.

Because he undergoes treatment for a continuous 28 days at the Center, there is time for more extensive interviews and thorough study of the patient. Residence at the Center also provides a short period of rest and relaxation away from the stress and immediate pressures in the patient's environment. Vitamins, medicines and nourishing food are coupled with light work details to restore the patient's physical health. Occupational therapists assist patients in learning new hobbies or reviving interests in long-forgotten pastimes.

Treatment at the Center is no "cure" for alcoholism. There is no known cure. But it does provide a short period of thought provoking self-examination and corrective experience designed to improve the patient's problem-solving ability and instill in him some degree of self-awareness and hope. Alcoholism usually takes from five to 15 years to develop to its most obvious stages. Recovery may also take several years. For this reason, patients are usually re-



**The alcoholic, seeking help for his problem, finds inspiration from the beautiful grounds of the Alcoholic Rehabilitation Center at Avon Park.**

ferred back to an outpatient clinic, a local group of AA, or some other source of continuing help when they leave the Center.

Let's examine the case histories of three alcoholics treated by the ARP:

**John D.**

Age: 46. Occupation: Mechanic. John had been drinking for 28 years, but experienced no trouble with alcohol until eight years ago. Neglect of food during the past eight years of uncontrolled drinking has weakened him physically. His wife is employed successfully in business. They have no children.

A physician uncovered John's problem with alcohol and referred him to a local ARP clinic. In talking with a therapist, John revealed frequent domestic quarrels stemming from his employment and income which is less than his wife's. John indicated he resented

the inferior position he held in relation to his wife, but admitted he made no attempts to assert himself. He regarded his wife as strong in character, himself as weak. From his parental home experience, John viewed men as weak and passive figures, women as dominant and strong. Alcohol helped soothe his feelings of inadequacy.

John stopped drinking almost immediately after entering treatment. Vitamins and attention to his diet restored his physical health and through therapy he gained a better understanding of himself and learned about alcoholism. He began to assert himself in his marriage. His wife was counseled by another therapist simultaneously to help her adjust to her new role in the family. Today, after three years of treatment, John handles his affairs more competently and no longer uses alcohol as a solution to his problems. His marriage has stabilized.

#### **Jim B.**

Age: 43. Occupation: Between jobs. Jim has been drinking heavily in spurts since 1943. An early marriage terminated as a result of prolonged drinking bouts, and he has never remarried. Drinking has cost him several important jobs and a Ph.D. degree in English. Jim wound up jobless and in a hospital after his last drinking bout, and a private physician referred him to the ARC in Avon Park for 28 days of treatment.

At the Center, Jim experienced a feeling of calm and lack of stress. He participated actively in group and individual therapy and spent his spare time in occupational therapy renewing an interest in painting. Participation in the therapeutic community at the Center gave Jim an opportunity to know and work with other people, participate in making decisions and taking responsibility for them. Nourishing food, vitamins, rest and light work details helped restore his physical health.

The therapist at the Center found that Jim's past troubled him. Jim spent his early years in foster homes and seldom saw his parents, who were separated. His father was an alcoholic. The family was reunited when Jim was nine years old, he said, but he never felt that his father really wanted to be tied down with a family. Jim set high standards of achievement for himself but felt he was a failure because he didn't get his Ph.D. He was distressed by the way drinking bouts had brought an end to every important job he had ever had.

Like his father, Jim used alcohol to face his problems and major responsibilities, including marriage, working toward a doctor's de-

gree and holding down important jobs. Therapy at the Center helped him clarify his problems and face them realistically. The Center staff recommended continued therapy and referred Jim to an ARP clinic near his home when he left the Center. Continued therapy helped Jim more effectively plan for his career, and he now holds a high-level management position with a major industry in Florida. He has not had a drink since he started treatment in 1958.

**Jane M.**

Age: 38. Occupation: Housewife. Jane has been drinking heavily since age 24. She first came to Florida as the daughter of a successful New York businessman who retired here. She married a Florida resident and they have three children. Jane was referred to an ARP outpatient clinic by her pastor.

Jane stopped drinking soon after starting treatment. She told her therapist at the clinic that she started drinking when she was 16 and had been a "wild girl" in her youth. Her husband, she said, is also an alcoholic. He is not interested in her or the children, although he has provided an excellent income. The clinic staff recommended that Jane be admitted to the ARC in Avon Park. There Jane formed good relationships with the staff and with other patients. She began to explore her problems courageously and fully and worked out her relationship with her parents and husband. The entire experience at the Center gave Jane a stronger view of herself as a human being who requires, and is worthy of, respect.

When she left the Center, Jane was referred to the outpatient clinic. She re-entered treatment enthusiastically. Jane now has a better attitude toward her problem and has encouraged her husband to enter treatment, although he has refused thus far. She still has emotional upsets, due primarily to her husband's drinking and behavior, but she has not resorted to drinking. She recently contacted a nearby group of AA and is attending meetings regularly.

\* \* \* \* \*

The above are the "success" stories of three alcoholics who received help with their problem. They came from different walks of life. They were not "cured" of alcoholism because, as we have stated, there is no known cure—but they have arrested the illness.

There is no preventive vaccine for alcoholism and there is no miracle drug to wipe it out. There isn't even a single known cause of alcoholism. Yet alcoholics **can** be treated, and they can recover.

In fact, preliminary results from studies and surveys underway by the ARP indicate that nearly two-thirds of the patients treated by the Program respond to treatment and are improved as a result. The remaining one-third of the patients are unimproved or their fate is unknown.



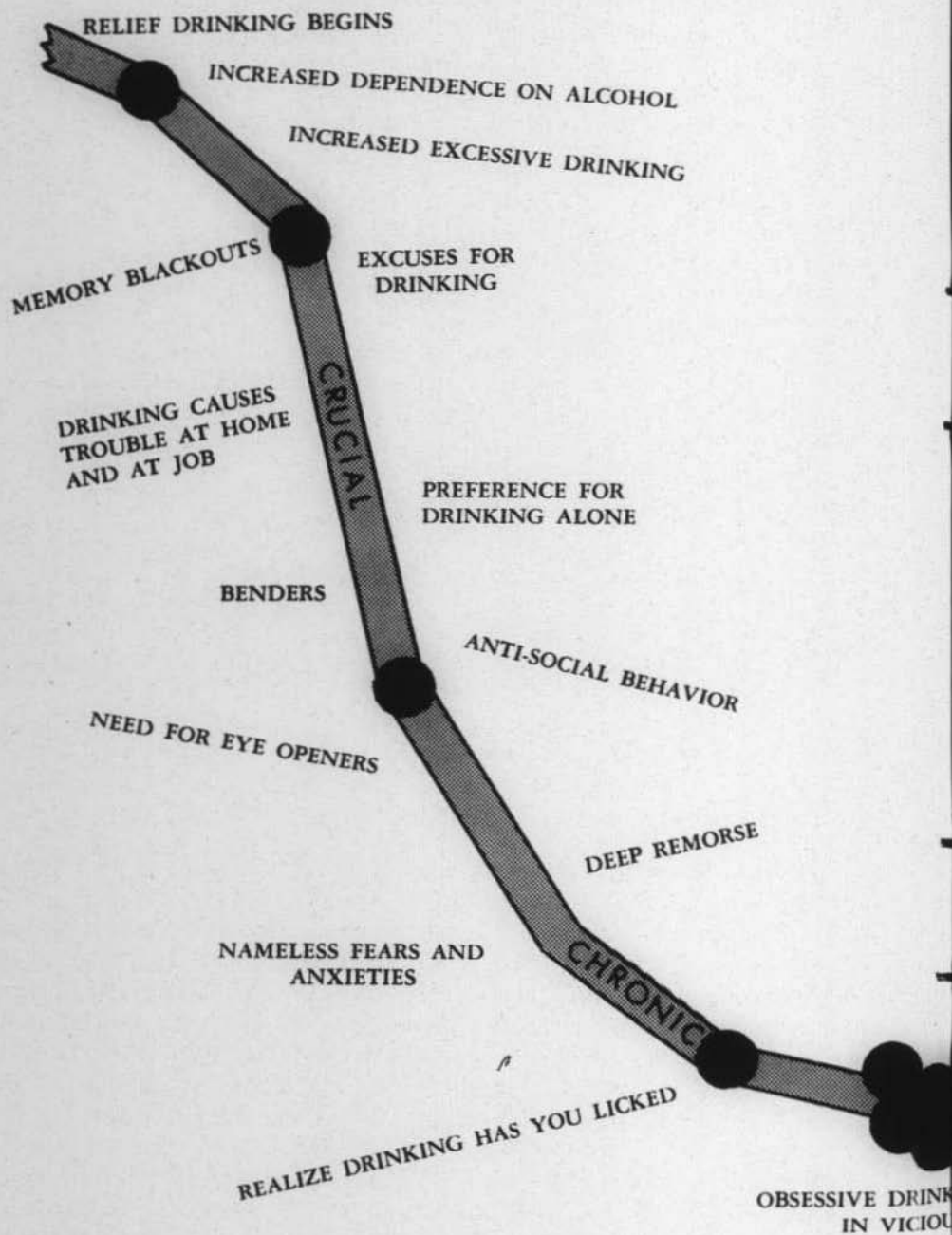
The best of medical care is provided by the doctors and nurses on the staff of the ARP inpatient treatment center.

Yet even with these striking results, the treatment facilities of the ARP are not considered the answer to alcoholic treatment in Florida. Due to the population explosion, the nearly 8000 patients treated by the ARP since 1956 represent only a fraction of the 150,000 alcoholics in Florida. Furthermore, the ARP at this point is unable to keep pace with the rate of increase of the alcoholic population in the state. Add to the figure being treated by the ARP the more than 3000 members of AA in Florida, and you still have but a fractional percentage of the ever-increasing alcoholic population of the state.

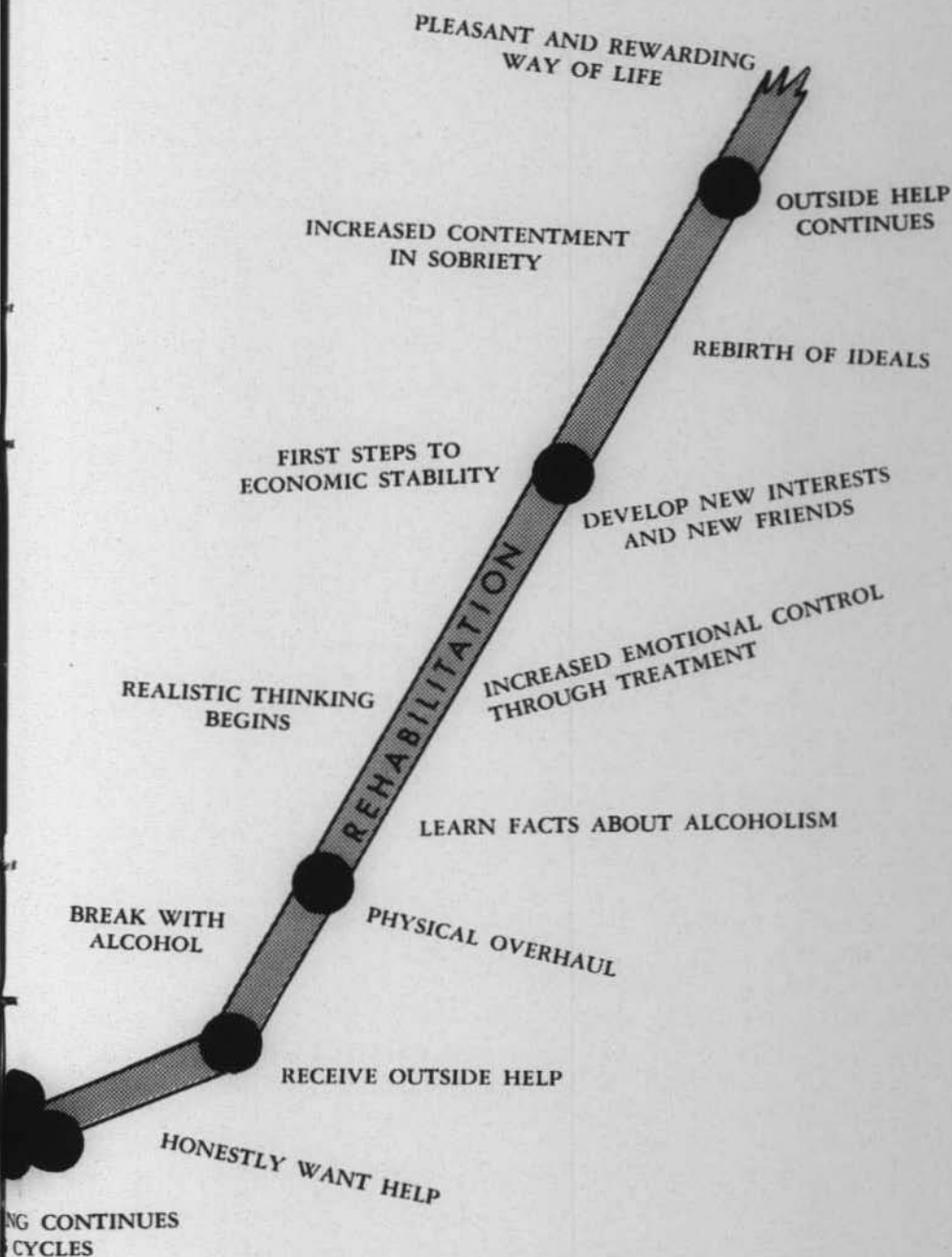
Therefore, the ARP considers its treatment facilities in a large sense **demonstration facilities**. That is, the specialized knowledge



# A CHART OF ALCOHOL AD



# DICTION AND RECOVERY



gained by the professional staff of the ARP treatment facilities is used in helping other organizations, agencies, institutions and professional groups to deal more effectively with the alcoholics they encounter. ARP clinicians demonstrate that alcoholics can be rehabilitated and continually look for more and better ways of getting the job done. Many of the skills, techniques and knowledge gained by these specialists can be partially adopted by or integrated into many existing sources of public assistance. Ministers, physicians, nurses, judges and counselors of all types need specialized training in working with the alcoholic patient or client. By treating, training, teaching and testing, the ARP seeks to increase the available help for alcoholics.

### **Education**

Alcoholism is a community problem. It occurs in the community, and it is there that its effects are most felt. Judges and law enforcement officers are frustrated by alcoholics who are repeatedly in and out of the jails on charges of public intoxication, disorderly conduct or nonsupport. Welfare workers frequently come in contact with alcoholics who cannot support their families. Business organizations often fire long-term employees when they develop drinking problems and are faced with high costs for training replacements. Pastors of churches in the community are contacted by alcoholics and their families who are seeking help with their problem, but cannot find it. Public health nurses visit the homes of alcoholics who have no funds for adequate medical care for their children, even though they may have good incomes. Many physicians treat alcoholics for physical ailments when they are sobering up, but are disappointed when the alcoholic fails to remain sober.

Outpatient clinics of the ARP, local groups of AA and other resources may be available to the community, but unless the community is aware of them, they are of little use. The ARP recognizes the need for information and training in meeting the problem of alcoholism at a local level, and seeks to provide the necessary information and services.

The community must first become aware that alcoholism is a treatable illness. The ARP's Education and Information Sections specialize in creating awareness of the problem and interest in doing something about it. Through news releases, feature stories, magazine articles and radio and television programs, ARP channels alcoholism information throughout Florida. Films, speakers, books, pamphlets and exhibits are made available without charge to interested persons and groups in the community. People are in



**Learning new skills, or relearning old ones, plays an important role in the rehabilitation of the alcoholic at ARC.**

formed of the existence of the ARP as a statewide resource for treatment, educational services and other types of specialized assistance. When community representatives show an interest in more intensive information or activities, ARP educational workers step in with individual contacts, speakers to civic and church groups, seminars and training programs for various professional groups and programs for community public meetings.

Existing community resources are surveyed to improve referral services for the alcoholic or his family, and assistance may be provided in determining the need for additional facilities at the community's request. The ARP may offer advice and support to the community in formulating and carrying out plans of action to meet specific local needs.

#### **Local Participation**

A classic example of community involvement can be seen in the development of an alcoholism facility within the Sarasota County Health Department.

On a scholarship from the ARP, the director of the Sarasota County Health Department (CHD) attended the Yale Summer School of Alcohol Studies, a four-week course on alcoholism. (The

school has since been transferred to Rutgers State University, New Jersey.) Armed with more thorough knowledge of the problem and what could be done about it, the director enlisted the support of community leaders and several practicing physicians and secured the cooperation of Memorial Hospital in Sarasota.

The approach to the community program was made in five steps. The CHD contacted and discussed the proposed program with the sheriff's department, police, hospitals, welfare and other governmental agencies. Then it carried its program to the nongovernmental groups—the medical society, nurses' association, Salvation Army and the council of social agencies. Then teachers, ministers, social workers, nurses, business executives, personnel managers and others were approached—and asked for their support. This was followed by contacts with the newspapers, radio and television stations and civic clubs and, finally, the general public. The CHD also carried on special health education projects with the schools and set



**Bright, attractive rooms at ARC are provided for the patients who may stay up to 28 days for intensive individual and group therapy.**



up an extension course for teachers and other professional workers under the General Extension Division of Florida. This course was taught by an instructor from the University of Florida, who used ARP staffers as frequent guest lecturers and resource persons.

With the ARP acting as a resource for consultation and planning, and with the support of community leaders and various groups and agencies, the director of the Sarasota CHD set up a service for alcoholic patients similar to other health services (such as well-baby and prenatal clinics) without establishing an expensive clinic. Memorial Hospital in Sarasota donated hospital space for the clinic.

The service maintained by the Sarasota CHD offers only individual and group counseling by a psychiatric social worker or a public health nurse. Alcoholics are treated by their own physicians (if a patient does not have a physician, the health department helps him find one through the welfare department). The CHD also refers patients to the Avon Park Center and does the preliminary work of securing the patient's social history and completing the application form. A physician does the necessary examination. Since there may be a waiting period of several weeks before the patient can be admitted to the Center, the CHD continues to work with the alcoholic, gets him lined up with a counseling group and helps him make plans for his future after his return from Avon Park.

A psychiatric social worker, formerly with the ARP, joined the health department and now directs the service. The federal government, interested in the project (one of the few CHD alcoholism treatment services in America today), is in the process of extending a grant for a five-year demonstration of the service project.

\* \* \* \* \*

A similar situation may be developing in the West Palm Beach area, where a one-day seminar on alcoholism and follow-up contacts with community leaders sparked the Palm Beach County Community Services Council to appoint a continuing committee on alcoholism. The committee surveyed seven counties to determine the incidence of alcoholism in the area, and the results of the survey indicated community support for an alcoholism treatment service. The Council is now supporting the establishment of a clinic.

\* \* \* \* \*

The work of one woman in the Hillsborough County Board of Public Assistance is an example of what a dedicated and interested county welfare worker can do to meet the problem of alcoholism. Her caseload included a large number of alcoholics. Interested in helping them rather than just temporarily easing their misery, she

took full advantage of the ARP's Tampa Outpatient Clinic when it was established in 1955. She worked closely with the clinic for some time and attended the Yale Summer School of Alcohol Studies (on an ARP scholarship) to increase her knowledge of the problem. She soon became an effective liaison person between the Tampa Clinic and her agency and assisted patients in many ways.

But the caseworker felt that something else was still needed. There are alcoholics, who, due to their physical health and other problems, are not eligible or appropriate for clinical treatment. These people needed help too, so she sought and received ARP support to conduct a pilot study for treatment of these alcoholics. She interested her organization's medical officials in trying a project involving medications, and the project was called "Operation Dry Dock" and sought socialization and better adjustment of its patients.

"Operation Dry Dock" is still underway in Hillsborough County. The county courts refer a number of cases to the project for assistance. There is a pleasant meeting place, where "clients" may participate in group therapy, relax, drink coffee and work on simple occupational projects. The caseworker continues to work closely with the ARP Clinic in Tampa.

The problem of alcoholism in business and industry is costly. In an effort to help Florida meet the problem, an Industrial Services Officer last year was appointed to the ARP staff. His prime responsibility is working with Florida organizations in establishing company alcoholism programs. These programs are designed to educate management and employees about the problem, train supervisors in detection of alcoholism and establish uniform systems of referral from the company to treatment services.

#### **Other Agencies**

Other state agencies, too, have their problems with alcoholism, and assisting these agencies to tackle the problem is another function of the ARP. The Florida Probation and Parole Commission is seriously concerned about the number of probationers and parolees who have problems with alcohol and who frequently return to jail because of crimes committed with alcohol as a contributing factor. The Commission recently collaborated with the ARP on a pilot study in which a number of alcoholic probationers and parolees were treated. The results of the study were encouraging, and the two agencies are now discussing future collaborative treatment.

The importance of job satisfaction to alcoholics and the value of

services by the Vocational Rehabilitation (VR) Services of the State Department of Education in the rehabilitation process are also being studied by the ARP. It is also cooperating with the VR in a research and demonstration project financed by a \$90,000 grant from the Office of Vocational Rehabilitation of the U. S. Department of Health, Education, and Welfare. As a part of the project, 1000 alcoholic patients at the Avon Park Center will be offered VR services over a two-year period.

Many agencies, communities and persons come in contact with alcoholism or problems stemming from it. Space limitations of **Health Notes** prohibit going into the problem as it affects law enforcement agencies, tuberculosis hospitals, the courts, private social agencies and others.

### **Research**

Research is the ARP's third major area of activity. ARP clinicians are interested in learning all they can about alcoholism and its treatments. What type of treatment worked for whom and why? Why did treatment fail with Patient A and succeed with Patient B? These are some of the questions to which they are seeking answers in an effort to prescribe varying types of treatment for different types of patients.

The ARP conducts surveys, follow-up studies, etc., and occasionally supports basic research in an effort to extend the knowledge of alcoholism and methods of treating the problem.

### **The Mental Health Problem**

Anyone who works with alcoholics can see the physical and mental anguish that alcoholism can bring.

A person who has a problem with his family, difficulty with his employer, or any other of the many perplexing social situations, may take to the bottle and withdraw into himself. Such a person may develop mental illness.

The mentally-ill alcoholic presents a tragic problem. The outward appearance is one of alcoholism but alcoholism is only a minor part of his trouble, even though it is serious in itself. When alcoholism is arrested in the mentally disturbed patient, a major illness remains. Some alcoholics travel so far down the road of excessive drinking they develop mental illness. If their illness cannot be cured, they will require custodial care for the remainder of their lives. Such alcoholics are cared for in state hospitals or private institutions designed for the mentally ill. Some alcoholics manage to avoid irreversible mental illness but others are not so fortunate. The

public health nurses of the County Health Departments visit furloughed patients from mental institutions and help them in any way they can, either individually or by referring them to community agencies.

#### **LONG RANGE GOALS—CONTROL AND PREVENTION**

- \* Citizens must know the danger signs of alcoholism and recognize that people who cannot drink in controlled ways must be helped.
- \* Physicians must be ready and willing to treat acute alcoholism and assist in a rehabilitation program.
- \* General hospitals and their staffs should realize that alcoholism is more than an intoxication and must treat it as they do other illnesses.
- \* Clergymen must use their spiritual resources and counseling skills to help the alcoholic and his family.
- \* Social agencies must offer assistance to families whose normal problems have been aggravated by alcoholism.
- \* County Health Departments must accept responsibility for alcoholism the same as any other public health problem.
- \* Employers must recognize the early signs of alcoholism in employees and assist them.
- \* Schools must provide a scientific and factual basis on which students may make a rational and responsible choice when they face the role of alcohol in their lives.
- \* Police officers must be informed about alcoholism and know how to handle and help the alcoholic.
- \* Courts and laws must recognize treatment as a way to help the alcoholic.

### **Clinics**

Help for the alcoholic may be found at the following locations:

\* **Outpatient Clinics of the Florida Alcoholic Rehabilitation Program:**

Jacksonville Clinic—1241 South McDuff Avenue, Telephone EV 9-7327

Miami Clinic—1637 Northwest 19th Avenue, Telephone FR 4-0994

Pensacola Clinic—1107 West Avery Street, Telephone HE 8-3006

Tampa Clinic—Professional Arts Building, Room 206, 420 West Lafayette Street, Telephone 253-3849



\* **Inpatient Treatment Center**

Avon Park Center, P. O. Box 1147, Avon Park, Telephone GL 3-3151

\* **Related Facilities**

Sarasota County Health Department, 1865 Hawthorne, Sarasota, Telephone 955-8101

J. Hillis Miller Health Center, University of Florida, Gainesville

## Literature

The following are only a few of the pamphlets available from the Florida Alcoholic Rehabilitation Program, P. O. Box 1147, Avon Park, Florida.

Alcoholism: A Family Guide To Understand the Illness and What To Do About It. Ernest A. Shepherd.

Alcoholism: Disease or Disgrace? National Council on Alcoholism.

Florida Law on Rehabilitation of Alcoholics.

From Despair to Hope. Jane Doe in the **Tampa Tribune**.

Help and Hope.

13 Steps to Alcoholism. Morris T. Weeks, Jr.

What Do You Mean Alcoholism Is a Disease? American Medical Association.

Alcoholics Anonymous—Questions and Answers.

Community Professional Teamwork and the Alcoholic. Margaret Cork.

Facts about Alcohol. Raymond G. McCarthy.



# Films

The following 16 mm films may be borrowed from the State Board of Health, Audio-Visual Library, P. O. Box 210, Jacksonville 1, Florida:

**The Bottle and the Throttle**—A study of the problem of drinking and driving, primarily directed toward the teen-age driver who is confronted with alcohol for the first time.

**Pay the Piper**—A dramatized story of a father who is concerned with the question of who gave his teen-age daughter whiskey.

**Alcohol and the Human Body**—The effects of alcohol on the body and organs.

**Alcoholism**—A case history of an alcoholic and how events in his background contribute to his dependency upon alcohol.

**Challenge**—The story of an alcoholic and his recovery through treatment at an ARP outpatient clinic and at the ARC at Avon Park.

**I Am an Alcoholic**—The story of Alcoholics Anonymous through the experiences of one man.

**Out of Orbit**—How help may be obtained for the alcoholic and his family.

## Filmstrips

**Alcohol and You—Part One**—Basic facts about alcohol and its uses.

**Alcohol and You—Part Two**—The effect of alcohol on the body.

**Why Do People Drink?**—Designed to give both sides of the question as to why people drink.

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All counties in Florida have organized County Health Departments

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# FLORIDA HEALTH NOTES

VOL 54 — NO. 10

DECEMBER 1962

**RESEARCH  
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## **LIST OF ABBREVIATIONS**

- ADC — Aid to Dependent Children**
- ARC — Alcoholic Rehabilitation Center**
- ARP — Alcoholic Rehabilitation Program**
- CHD — County Health Department**
- DCHD — Dade County Health Department**
- DCMA — Dade County Medical Association**
- ERC — Entomological Research Center**
- FMA — Florida Medical Association**
- FSBH — Florida State Board of Health**
- FSU — Florida State University**
- FTHA — Florida Tuberculosis and Health Association**
- JMH — Jackson Memorial Hospital**
- NIH — National Institutes of Health**
- U of F — University of Florida**
- U of M — University of Miami**
- USPHS — United States Public Health Service**
- VRS — Vocational Rehabilitation Service**



# RESEARCH FOR YOUR HEALTH

Astronauts circle the earth—as a result of **research**. Bigger tomatoes are grown and adults learn how to read faster—because of research, studies, fact-finding surveys and demonstrations. **And** we are less bothered by mosquitoes, know better how to treat syphilis and promptly detect rabies in a dog's brain—because your State Board of Health (FSBH) and County Health Department (CHD) are alert to the need for constantly improving and developing new ways to protect your health.

We think you will find this issue of **Health Notes** interesting reading. For example: Had you heard that people walk into clear glass doors and sometimes are injured? Do you know that Florida has one of the lowest pollen counts in the nation? Maybe this last bit of information doesn't interest you but it helps to answer the many letters from hay fever sufferers all over the country received by the State Board of Health.

Read on—and be proud that you are a citizen of a county, a state and a nation that has a collectively curious mind and wants to study problems and conditions that affect **you**. Be proud, too, that you pay taxes and contribute to the many organizations that have sponsored and helped pay for this research.

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## FLORIDA HEALTH NOTES

Published monthly except July and August on the 5th day of the month by the Florida State Board of Health. Publication office Jacksonville, Florida, headquarters of the State Board of Health. Entered as second class matter, October 27, 1921, at post office, Jacksonville, Florida, Act of August 24, 1912. It is intended primarily for individuals and institutions with an interest in the state health program, public and private. Permission is given to quote any story. Clippings of quotations or excerpts would be appreciated.

## ENTOMOLOGICAL RESEARCH CENTER

Work of interest to all persons in Florida is conducted at the Entomological Research Center (ERC), Vero Beach, because nearly all of their studies deal with methods to control or eradicate biting mosquitoes and sand flies which make life miserable for the vacationer, fisherman, gardener and just plain front porch sitters. Through its Bureau of Entomology the FSBH and federal agencies support the Center, which was dedicated in 1956.

Projects conducted at the Center are numerous and cover a variety of phases—all seemingly interrelated—and many of them are. Some studies are an attempt to learn methods of control over the “pesky” biting insects. Others are to understand the relationship of the mosquitoes to their environment. Still others study the origin, distribution, relationship and peculiarities of the insects. Functions of various organs which affect growth, reproduction, etc., are investigated also. The following are some of these “cross-fertilized” projects:



### *Mosquito Distribution and Abundance*

By a strange coincidence, Florida has the same number of counties and mosquito species—67. Other states have more counties, but none such a variety of mosquitoes. If each county had only one mosquito species, the control problem would soon be solved. As a matter of fact 22 species are in every one of the 67 counties, and only a handful of species are limited to one county each. Individual counties have from 25 to 50 species, averaging about 40. This means an average Florida county has a greater variety of mosquitoes than an average whole state among the other 49 states.

Of the 67 Florida mosquitoes, seven are of primary importance and 10 of secondary importance. The remaining 50 species are of

Research means different things to different people. Formal research is a careful inquiry made in a critical manner to learn new facts which may be useful for generalized application. The inquiry may be a controlled systematic study or a purposeful inquiry for new information. This is research in the restricted sense.

For **Florida Health Notes** readers, however, research in public health in Florida is here broadened to include two other types of studies. A demonstration is the application of a theory, program or planned action on individuals or groups for a specified time. Conclusions are drawn and evaluated as to the effectiveness of the demonstration and its best possible use. Survey or fact-finding is methodical interviewing of individuals to discover facts which might be helpful to a particular program.

Projects are listed under the Florida State Board of Health, counties and agencies in which they are conducted. Whenever possible, cooperating organizations responsible are noted. Research funds for the year total over \$800,000 contributed by national, state, county, local and voluntary groups.

biological interest but are relatively inconsequential to human health and comfort. Each of these important mosquitoes has its special geographical and seasonal pattern of abundance in the state, which it is important to all mosquito-control workers to know and understand thoroughly.

The distribution and abundance of Florida's mosquitoes is determined from a statewide network of "light traps." These are devices in which mosquitoes are attracted by a light and then sucked into a poison jar. For over 15 years, the SBH has operated over 100 of these traps on a year-round basis, collections being made routinely every Tuesday and Friday. The collections are mailed into Jacksonville where biologists of the Bureau of Entomology, FSBH, identify, determine the sex and enumerate them.

The huge quantity of data now available is being analyzed and studied. A manual is in preparation which will show, in great detail, the distribution, number and seasonal patterns of every one

of Florida's 67 mosquito species. This project is supported entirely by state funds and should be completed in two years.



### *Mosquito Adulticiding (the killing of an adult)*

Although the best kind of mosquito control is prevention, a well-rounded program should, if possible, go also after the adult mosquitoes that constantly come to maturity during those long years it takes to "immobilize" all the breeding areas. Adulticiding is a must: when a disease epidemic demands immediate eradication of mosquitoes, and when a local tourist economy requires that people enjoy the outdoors with the least possible discomfort. It is plain, then, that Florida mosquito-control district directors must know how to use mosquito adulticides.

Years of experience and research in Florida have eliminated many adulticiding methods once popular in the state, in favor of a method proven to be both effective and economical—the well-known "fogging." In this technique a solution of insecticides in fuel oil is broken by various machines into an aerosol or "fog" which, under proper weather conditions, rolls over the ground, penetrating every nook and cranny, delivering death to every mosquito it touches. Fogging is not as simple an operation as it may seem to the layman. Many things have to be just right for it to work: insecticide formulation, discharge rate, speed of the vehicle, air temperature stratification and wind, and several other factors. The best of these conditions can be determined only by research. This is night work (fogging doesn't work by day), using specially calibrated equipment, accurately measured materials, uniformly caged mosquitoes and performing the operation in a rigidly specified manner on the test range.

In addition to the generally used truck-mounted fogger technique, other methods and problems in adulticiding are undergoing continuous study, a few examples being: airplane fogging and spraying, small foggers for premise work, comparative studies of different machines, scheduling and routing of adulticiding operations, and the never-ceasing search for better, cheaper and safer insecticides for the purpose.

This project is mainly state supported. A National Institutes of Health (NIH) grant of \$24,000 is supporting a study of fog particle measuring techniques.



### *Mosquito Larviciding*

Many insecticides can kill mosquito larvae, but only a few can be most effective, or safest, or most economical. These are the three research criteria for mosquito controls that Florida is applying to its larviciding operations and continually trying to improve. Paris green pellets offer the best present compromise.

**Effectiveness** means killing power with efficient application. Under Florida conditions this generally means airplane application on heavily vegetated waters. The problems of research therefore break down into many facets: developing a pellet which passes readily through vegetative cover, establishing minimum dosage, determining the best dispersal apparatus for the plane, calibrating dispensers and measuring swath widths, achieving the best payload, and determining the best flying patterns and pilot-flagging



systems. A final and important factor in effectiveness is the likelihood of resistance to the insecticide developing in the mosquito. The inorganic nature of Paris green makes it very unlikely that this will occur.

**Safety** in a larvicide means degree of harmlessness to all other life but mosquito larvae. In a state with such rich and heavily-used aquatic resources, a safe larvicide is a must. Several effective and economical larvicides are therefore bypassed in favor of the very safe Paris green and every research effort is made to increase the economy of operation with it.

**Economy** in a larvicide means simply treating the most acreage of breeding for the least money. The currently recommended Paris



green pellet technique is almost but not quite as economical as rival methods which are nowhere near as safe and not as effective from the standpoint of resistance development.

While research is continuing to make Paris green larviciding more effective and more economical, the door is never closed to other potential larvicides and exploration of new leads is never given up.

This project is greatly aided by the cooperation of the Indian River Mosquito Control District.



### *Control of Salt Marsh Mosquitoes by Impounding*

Salt marsh mosquitoes present one of the more important obstacles to the development of a full-fledged summer tourist business in Florida. Literally millions of these pests per acre are produced in the summer months in the great salt marshes along both coasts of Florida.

These are floodwater mosquitoes which thrive only under conditions of alternating flooding and drying of the breeding places. Therefore the basic approach to control is to change this condition so that the marshes are either continuously wet or continuously dry.

While drainage works well to prevent water from standing on these marshes along the Gulf Coast, because of different tide conditions this method of water management is not entirely satisfactory in preventing mosquito production in the salt marshes along the Atlantic Coast of Florida.

Diking the salt marshes and keeping them flooded (impounded) to prevent egg laying by the floodwater mosquitoes has proven to be an effective method of control on the Florida East Coast. However, the most economical methods of water management in the utilization of this method must be determined through long-range research. This research, which already is in progress, also must determine the effects of diking and flooding on the propagation and maintenance of commercial and sport fishes as well as other wildlife resources.



## *Control of Pasture Mosquitoes*

The poorly drained, intermittently wet and dry, flatwoods and glades of Florida were made to order for certain mosquitoes which lay their eggs on moist ground where they can survive months or even years and still be ready to hatch whenever a good, flooding rain comes along. Such are the Glades mosquito and the huge "Gallinipper." Their hungry hordes once killed livestock and made human survival in the backwoods a matter for the very sturdy only. Agricultural and residential drainage has materially lessened the production of these mosquitoes, but when water "control" began including irrigation as well as drainage, the stage was set for increasing their production.

Groves and ranch lands where water is intermittently allowed to stand in the swales for proper irrigation of pasture grasses or citrus trees are being increasingly converted into mosquito nurseries. Glades mosquitoes of Florida could more truthfully be called pasture mosquitoes, so great is the growth of pasture improvement and so generally are pasture improvement methods favorable to mosquito production. The research needed to control such a situation is obviously more than entomological research. The entomologist must team up with the agronomist and the hydrologist. Experimentation can be undertaken only on actively used ranch land, demanding the essential cooperation of ranch owners.

The objective of research on this problem is then to devise water-control methods for improved pastures to prevent the production of mosquitoes while at the same time satisfying the water demands of the grass. This research is just beginning. Cooperative efforts are being developed.



## *Control of Sand Flies*

In many coastal areas of Florida, the salt marsh sand fly competes with the salt marsh mosquito for man's blood and, consequently, man's wrath. This almost invisible biting fly emerges from the water-logged soil of channel banks, ditch sides and mud flats in the tidal areas. Its larvae are very small worms that live and grow in such places. The adults do not usually fly far from where they emerge, but the increasing popularity of waterfront

homes in Florida is bringing more and more people to live right in the haunts of these vicious gnats.

The only way these sand flies can be controlled other than through insecticides is by either filling the land involved or keeping it flooded. Flooding the salt marsh for mosquito control is also liberating the same coastal areas from the sand fly plague. Research on the biology of sand flies may someday bring about other non-chemical control methods, but little of this is being done.

No presently known larvicide will effectively control sand flies without two very undesirable side effects: killing fish, shrimp, crabs and all kinds of other desirable aquatic life, and building up resistance to the insecticide in about three sand fly generations. Because of this no larviciding is recommended. Research is under way to develop a good sand fly larvicide. The project, with a very limited budget, is now merely at the laboratory chemical-screening stage. Aside from funds, the biggest bottleneck in this research is inability to mass-produce sand flies for testing purposes, which in turn, is attributable to lack of biological information.

The fogging done commonly for mosquito adult control will also kill sand flies. But sand flies are being produced continuously, so new contingents of adults are continuously appearing. This makes aduictiding rather futile since it has to be repeated every few hours to do any good—as well as every day. No aduictiding research is under way or contemplated.

The control of sand flies is therefore awaiting greatly expanded research.



### *Lake Productivity and Aeration*

Florida's lakes are all just naturally rich, meaning their production of living matter is high compared to lakes in other parts of the country. Those deep, rocky, glacial lakes of the far north are unproductive because there are few minerals and nutrients in their waters and because they are cold. By contrast, Florida's lake waters are warm and loaded with nitrogen, phosphorus and other mineral nutrients. This warmth and food make it possible for Florida lakes to produce microscopic plants and animals in very

large quantities, and these in turn support larger insects, crustacea, etc., which of course are in turn the food of fish, frogs, birds and other large animals. The total process of *all* plant and animal life is reproduction.

Florida lakes are not only naturally productive but human populations have unknowingly increased that productivity by adding nutrients to the lakes, such as fertilizer run off from cultivated hillsides, and drainage from sewage treatment plants and canning plants. Many rich lakes have thus become overrich, and are often problem lakes producing unwanted odors, discolored water, algal mats or "blooms," or pest numbers of "blind mosquitoes," mayflies and true mosquitoes.

The lake limnology (study of fresh waters) project in Winter Haven is trying to uncover the basic causes of overproductivity in Florida waters and is trying to develop ways and means of combating such situations. One of the control methods currently being tested is aerating the lakes. The chemical situation in a lake is usually in a state of equilibrium which is not too stable, and a simple procedure like introducing air to the bottom can upset the balance very drastically. It is hoped that the changed chemical situation will reduce the productivity of these overrich lakes thus controlling some of the overproduction problems.

This research into what could be termed lake sanitation has had the support of the state, Polk County, Winter Haven and more recently has been aided by a \$76,000 NIH research grant. Barring unseen developments, the project should be concluded in about three years.



### *Control of Midges (a very small fly)*

The "blind mosquitoes" of Florida are neither blind nor mosquitoes but harmless midges whose only crime is being too prolific around certain lakes and making life miserable for lakeside residents by smothering all the shrubbery, plastering the outside of houses and invading the inside at the least sign of light, ruining new paint jobs, fouling clotheslines and making themselves just generally obnoxious. They seldom live more than a couple of days as adults and do not eat at all. Their larvae live weeks or months in



the bottom of lakes in silken tubes as reddish worms half-an-inch or so long. These "bloodworms" filter microscopic plants and animals out of the water for food. Their numbers go up and down more or less with the amount of such food in the lake water, as was shown by measuring the food in lakes and in their stomachs. Overproduction of midges is thus the result of an overrichness of lake waters.

The possibilities of controlling these midges are being explored in the Winter Haven area. The insecticides which once killed off most of the larvae lost their effectiveness one by one as the midges built up resistance. At the moment no larvicide is recommended, but research is under way at a better pace than ever and an effective larvicide may appear in a few years. The adult midges are killed easily with the same fogging technique used against mosquitoes. This has to be repeated so often, however, that it is hoped that better control methods will emerge from present researches.

The use of biological control methods is also being explored. The right kind of predator (preying upon) parasite or disease could be the answer. Reducing the overall productivity of the problem lakes is also under study.

The midge problem is increasing throughout the world as the swelling multitude of mankind dumps more and more nutrients into natural waters. Whatever solution arises from Florida's research efforts will be gratefully received throughout the world.



### *The Study of "Blind Mosquitoes"*

Rapid population growth in areas surrounding lakes has caused an increase in the nutrients going into these lakes, with a resulting enormous increase in the production of "blind mosquitoes" or **Chironomids**. These insects do not bite but emerge in such enormous numbers that they make outdoor living impossible. The larvae are a source of trouble in water plants, sewage treatment plants and swimming pools.

Before satisfactory methods can be worked out for controlling these insects, what species are involved and something of their life histories must be known.

In September 1961, a three-year study was begun under an



NIH grant, (\$19,616), to determine what species occur in Florida, which are the nuisance species and what their life histories are. The study is being made by biologists in the Bureaus of Sanitary Engineering and Entomology of the FSBH. Larvae have been collected and reared in the laboratory. Thousands of adults have been collected and identified, revealing data on geographical and seasonal distribution. So far close to 200 different species have been found.

It is hoped that by the completion of this study enough will be known about the more common species to suggest new ideas and approaches to biological and chemical control.



### *Fishes and the Web of Life on Salt Marshes*

A mosquito lays 150 or more eggs at a time. If all survived to become adults, Florida would be uninhabitable. Small fish that eat mosquito larvae are among nature's most effective regulators of mosquito numbers. Mosquito control measures should encourage these natural allies and avoid harming them.

Salt marsh studies begun in 1955 revealed that over 100 fish species frequent the flooded marsh. Food habit studies started the next year showed that six species of minnows do most of the feeding on mosquito larvae, while the young of food and game fishes—tarpon, snook, mullet—eat appreciable numbers. It was found also that when mosquito larvae are unavailable each important minnow falls back on its own characteristic diet.

To maintain adequate numbers of fish on marshes requires a knowledge of their breeding habits and of the foods they require when mosquitoes are lacking. These studies are progressively defining the spawning seasons and requirements of important minnows and what controls them. Day length and water movement, temperature, and salinity seem to be the major influences. One surprising discovery of this research was that certain minnows hatch from eggs flooded after having been stranded out of water for months. Another was the production of fertile eggs by another minnow without benefit of males, a phenomenon of wide interest to biologists and medical scientists, especially geneticists, endocrinologists and pharmacologists.

The next phase of these salt marsh studies will concern the movements of fishes and shrimp on and off the marsh and the production of organisms within the marsh. Findings here will guide mosquito control in planning ditching or impounding without injury to minnows, game and food fish, shrimp and bird resources. The objective is to clarify interactions among animals and between animals and physical factors of the total marsh habitat, which is the joint concern of mosquito control and wildlife management.

Between 1958 and 1962 these studies were supported by an NIH grant of \$60,000. The next five years will be similarly supported with \$100,000.



### *Sampling Mosquito Populations*

The mosquito control district director must know at all times what kinds of mosquitoes are in his district and in what numbers. To measure the effectiveness of his control work, he must sample the mosquito population before and after the treatment. The epidemiologist must sample the population to know how many mosquitoes are carrying diseases or what kinds of animals are bitten by certain species of mosquitoes. These are only two examples of how essential sampling is to mosquito control and research.

Sampling means drawing inferences about the total population from the relatively small number captured. This sample may be taken in various ways: collecting them in their daytime resting



*Adult Mosquito Culex*

places, or at night by extracting them from the air with suction or truck-mounted funnel traps. They may be attracted to traps by light or sound, or collected as they come to bite man or animals, etc.

Interpreting the results of sampling becomes complex when it is realized that: (1) lights, trees, animals, etc., in the immediate vicinity of the trap can cause traps in close proximity to vary greatly in the size of their catches; (2) each sampling technique

tends to select its own segment of the total population; for example, an animal bait trap would seldom take gravid (pregnant) females, and females digesting a blood meal can be found only in their resting places, and (3) weather factors such as temperature, humidity, wind and moonlight cause great fluctuations in the size of the sample.

Since 1949 research has been under way to learn what the possibilities of each sampling technique are, what species it particularly favors, what age of mosquito it favors, if any, and how that technique compares with others. If a sampling device works against a certain species at certain times of the night, or at certain temperatures, or at certain wind or moon conditions, the mosquito worker must know.

Between 1958 and 1962, an NIH grant has contributed \$48,000 to this study and an application is pending for another five years of support.



### *Wildlife and Impounded Salt Marsh*

Since salt marsh mosquitoes lay their eggs only on the ground, a sure way to stop breeding altogether is to keep the salt marsh covered with water. This also keeps salt marsh sand flies from breeding. Thousands of acres (15,000 in one county alone) are already "impounded" this way, and very effectively.

People interested in conserving fish and wildlife may wonder what impounding the salt marsh does to such important resources. Research is therefore under way to determine to what extent and at what times of the year it is necessary for shrimp, game fish and food fish to move back and forth between bays, estuaries and flooded marshes. Since there is very little salt marsh mosquito breeding between October and May, impoundments could be allowed tide-flushing during these months if it should prove beneficial to fish or shrimp propagation. It will take many years of study to establish such matters.

The apparent build up in bird populations on the salt marsh after impoundment early caught the eyes of ornithologists (one who studies birds). The U. S. Fish and Wildlife Service has con-

tracted with the ERC to investigate the wildlife potentialities of the flooded salt marsh. This three-year \$15,000 contract began in July of 1961.

It is hoped that out of all these studies will come a management scheme for the thousands of acres of salt marsh in Florida which will not merely control the breeding of mosquitoes and sand flies but which will develop as much as possible all the biological potentialities of the marsh which are beneficial to man.



### *Salt Marsh Mosquito Production*

The best test of one's understanding of an insect's biology is to produce in nature at will, and the best test of one's understanding of that insect's dispersal is to make it disperse in any desired way. This learning technique is being applied to salt marsh mosquitoes, not just because it is a fruitful approach but because a variety of projects require the mass production of test mosquitoes anyway.

A section of salt marsh has been developed into a mosquito nursery by contouring the surface into long narrow swales, groups of which are behind dikes and piped to reservoirs in such a way that the water table can be controlled. With the right kind of grass planted and the proper use of fertilizer, and by keeping the water table just under the surface, these swales, individually or in groups, are made very attractive to "wild" mosquitoes ready to lay eggs. The eggs, commonly laid at the rate of over a thousand per square foot, develop quickly into larvae which immediately go to sleep within the egg shell. All it takes to wake them up is for water to cover the egg. Then they hatch very quickly. Egg deposits in the swales can be kept for a year or longer. Much is being learned in the course of mass producing these salt marsh mosquitoes in this manner.

In the matter of dispersal, it is suspected that the length of the initial migration is controlled mainly by the density of adults at the emergence site, the time of day or night when this emergence occurs, and the condition of the new adults with respect to fat reserves brought over from the larval stage. Learning how to control all these things is being worked into the production program. Lar-

val diet control and water temperature control are at the heart of the problem, and they are being investigated.

It is hoped that within three years, salt marsh mosquito broods can be produced which will spontaneously either stay in the marsh, disperse a mile, or disperse 20 miles, as desired. This attempt is currently supported by a three year \$67,000 NIH research grant.



### *Mosquito Mating and Swarming*

The males of many insects gather in little dancing clouds which stay in one place as though mysteriously tethered to it. These are usually called "swarms." Mosquito males of many species swarm like this at twilight, and because females flying into or near the swarm are often caught and mated by males, the impression has gotten around that these are "mating swarms" and exist for that special reason of perpetuating the race.

Field observations under very difficult conditions have shown that in nearly all mosquito species the females are mated before they ever leave the place where they emerged from the water. By contrast, the mating in swarms is very easy to observe and has understandably given rise to misconceptions. Mating in some species occurs only on the wing, in others only at rest, and in others both ways. In some mosquitoes the coming together of the sexes is negotiated by vision, in others by the sound of the female's wing beat, and in others still by odor and touch. These things are learned by observation in the field or in "nature" and in the laboratory.

Male swarming is a formalized or ritualized habit the purpose of which no one has been able to determine. It was only when their being "mating swarms" was abandoned as a working concept that the true facts of mosquito mating were uncovered.

These studies are continuing at a diminished rate since the five-year NIH grant support of \$90,000 came to an end in 1961.



### *Dispersal of Mosquitoes*

How far mosquitoes range from their places of origin is of prime importance to mosquito control. Every mosquito species has its



characteristic limits, yet within these limits different broods or populations show remarkable variation. Thus a brood of salt marsh mosquitoes may scatter 30 miles from the breeding marsh while the next brood remains within one mile. The common house mosquito normally stays within a city block or two of its origin, yet broods have been known to disperse 20 miles.

Marking mosquitoes and tracing their flights, using up-to-date radioactive isotope techniques, is the only way of establishing how far mosquitoes scatter. But this will never explain why and under what circumstances they disperse little or much. For this it is necessary to carry out systematic observations and experiments designed to answer the whys and the wherefores, step by step, of every habit from egg hatching to ultimate dispersal.

Such an approach soon revealed that the total dispersal of a brood of salt marsh mosquitoes is the sum of several kinds of flight—an initial migration which may carry more than 30 or more miles or only a fraction of a mile, followed by a great number of shorter flights in search of food, shelter, a place to lay eggs, etc. Further study of the initial migration showed it to be greatly affected by density of breeding, time of emergence and temperature. Experimentation was brought to bear on these influences and it should soon be possible to create short or long migrations at will as demonstrations of the migratory mechanisms. Now the research emphasis is switching to the later “searching” flights, so that it may be possible to evaluate all such flights in terms of how much they contribute to the overall dispersal of broods.

The continuing researches on mosquito dispersal began in 1948. Since 1957 state support has been supplemented by NIH research grants ranging from \$15,000 to \$23,000 per year.



### *Adult Mosquito Feeding Habits*

Many insects have been controlled by taking advantage of their feeding urges to destroy them. The possibilities of these techniques against mosquitoes will remain as unknown as they are now until much more is known about their feeding habits. This means not so much knowing what they eat as how they reach their food, under

what circumstances and through what mechanisms. This same sort of information is, of course, necessary in understanding how mosquitoes carry diseases. If a virus is found in swallows it is not likely to be transmitted by mosquitoes which feed by day only, when the swallows are mostly on the wing. If a bloodworm is found in raccoons it is not likely to be transmitted by mosquitoes which always favor bird blood. And again, if mosquitoes are to be at-



*Adult Mosquito Anopheles*

tracted to baits, how to disperse these baits is certainly dependent on how far the mosquitoes are naturally attracted to animals for blood or flowers for nectar.

Daily cycles of feeding and choice of foods can be easily enough established from laboratory experiments. But how the mosquito is guided to its food and from how far is a much more difficult problem. Here the various "stimuli" that guide the flying mosquito must be individually studied. A common sequence of stimuli acting as guideposts to a blood meal follows the pattern: vision (a moving animal in the distance), odor (carbon dioxide exhaled by the animal and body odors at closer range), moisture (guiding the mosquito at close range), body heat (guiding the mosquito to where blood vessels are really close), and feeling (probing for a blood vessel). The first two of these, vision and smell, are the all-important factors badly in need of study. Once it is known how and from what distance a mosquito is guided to a potential host, "host-preference" studies will begin to make sense.

Although the ERC has struggled with these problems a long time it is just now going all out to solve them. It is planned to apply for NIH research grant support for these important studies.



### *Mosquito Colonization*

When an insect can be reared in the laboratory generation after generation without having to replenish stocks with wild collected eggs, larvae or adults, it is said to be "colonized." For many biological studies of mosquitoes it is essential to have colonies. Some

species are easily colonized, like the house mosquito and the yellow fever mosquito. Others are very difficult to colonize, especially the migratory forms like salt marsh and Glades mosquitoes. One is bound to learn a great deal about the habits of a mosquito in attempting to colonize it, so colonization serves several purposes.

The ERC has attempted colonization of 26 species of mosquito. It has succeeded with many, including one of the salt marsh species—the first migratory mosquito to be colonized in any laboratory. The species it has not yet succeeded with are in various stages of research. Every species has peculiar diet requirements as larvae and as adults, peculiar requirements for egg-laying, for egg preservation, but, most important of all, for mating.

The *Mansonia* mosquitoes, two species of which are common and important in Florida, offer special resistance to colonization because their larvae attach themselves to submerged parts of plants and get their air through the plant's tissue. Artificial attachment substances are being explored, as well as accepted plants easy to work with in the laboratory. Some *Mansonia*s attach their eggs to certain plants and thus present more colonization problems.

The most recently colonized species at ERC is an exotic form from New Zealand which could never survive in nature in Florida. This mosquito has several very remarkable habits and it was colonized in order to make it available for comparative studies in physiology and behavior.

The project is supported mostly with state funds, but it obviously benefits all studies regardless of how financed.



### *Mosquito Larval Growth Studies*

Mosquitoes, like all other insects, are through growing by the time they reach the adult or winged stage. All their growing is done while they are larvae or "wiggletails" in the water. From egg hatching to adult emergence may be six days to six months, varying with species of mosquito, time of the year and amount of food in the water. In controlling mosquitoes, no biological information can be much more important than this matter of duration of larval stages. Obvious reasons, like knowing how much time the mosquito control district director has to eliminate the larvae and being able

to predict when the adults will move in on a human population, are supplemented by not so obvious reasons.

Research has shown that adult mosquitoes of the same species are far from being all alike at emergence. Depending on their nutrition as larvae, how they were crowded and what temperatures they were exposed to, they may be large or small, short winged or long winged, fat or lean and with hormone secretion advanced or retarded. These characteristics in turn determine how long they will live and how far they can fly without a sugar meal, and whether or not they need blood meals to develop eggs.

A project was therefore initiated in 1961 to determine for Florida's major mosquito species the effect of temperature, diet and crowding in the larval stages on length of the larval stage and on types of adults produced. Starting in 1962, this study is supported by \$144,000 of NIH research grant funds over a five-year period.



### *Pupation Rhythm*

Between the growing larval stage of mosquitoes and the grown adult stage there is a transitional stage called pupa, the final aquatic stage. Within the hard outer skin of the pupa the future mosquito grows legs, wings, bill, etc., and undergoes all those astounding changes which will enable it to leave water and inhabit the atmosphere. The pupal stage may last from one to five or more days, again depending on temperature and species of mosquito.

In the salt marsh mosquito it was found that the change or moulting from larva to pupa occurs mostly in late afternoon and early evening. This has the effect of synchronizing the brood at both pupation time and adult emergence time. Since this synchrony was found to have an important bearing on migration, it became necessary to understand and learn to control this strange pupation rhythm.

In one of the refrigerator-like "constant-temperature rooms," a large temperature controlled water bath was built which accommodates 30 rearing pans. The double temperature control permits the water temperature in the pans to be kept constant within a tiny fraction of one degree. Since the larvae are blind to ruby-red light, it is possible to work with them at night without interrupting



their dark period. When the larvae reach pupation age, the pupae are removed from all pans at hourly intervals day and night, and their numbers and sexes recorded. In this manner experiments are conducted with different mosquito species at different temperatures, at different proportions of day to night, and with different diets. When these experiments are completed, it should be possible,



*Mosquito Pupa*

through the understanding achieved, to control and manipulate this pupation rhythm in the laboratory or field.

This project, about half completed, should be over in a year or so. It is supported with both state and NIH research grant funds.



### *Sexual Maturation*

When economic entomologists gather these days, the conversation often turns to such modern insect control techniques as breeding populations out of existence through releasing of sterile males (this is how the screw-worm fly was eradicated in Florida), introducing lethal or killing genes (heredity carriers in the cells) into populations, unbalancing sex ratios, etc. Most of these methods can be made to work only after the reproductive or sexual functions of the insect are thoroughly known. If any such futuristic methods are ever to be applied to mosquitoes, a great deal must first be learned about their reproductive physiology and behavior.

Although the winged or adult mosquito grows no more, many of its organ systems still require final development or adjustment. For instance, those marvelous compound eyes do not usually function properly until the mosquito is 24 hours old. But the most notable such post-emergence "maturation" pertain to sex organs. Thus, the male copulating (reproducing) organs cannot be used until the whole tip end of its body which bears them rotates 180 degrees; this has been found to take from eight to 48 hours, depending on temperature and varying with mosquito species. Also in males the sperm must descend from the testes to the seminal vesicles, which



occurs at once in some species but may take 12 hours or more in others. In the female, development of the ovaries is dependent on the function of glands which may secrete hormones at emergence or delay secretion for hours or days. In both sexes, wings and other parts of the exoskeleton (bone structure) must mature before any flying or mating can occur.

These are just a few examples of aspects of sexual maturation which are currently being studied by ERC physiologists. These studies yield essential information on when mating can occur in different mosquito species. The behavior specialists then determine through field and laboratory observation when mating does occur—in the life of the male and female, at what time of day or night, under what weather and other circumstances, and where. These are long-term studies which go on continuously.



### *Adult Mosquito Nutrition*

Of obvious importance to a control program are such questions as how long a mosquito lives and how far it can fly from the marsh. The answers depend on the small nutritional reserves the mosquito has at the beginning of its adult life and how much it can add to them in its first few days.

Once the adult has emerged from the water, it grows no more and needs only such food as will yield energy to survive and fly. (Blood is used only to mature eggs and does not enter this picture.) Survival depends on many things but the most important is availability of sugar, which is taken in the form of flower nectar mostly. The ERC's studies of the sugar-feeding habits began in 1953 when it was first observed that salt marsh mosquitoes fed heavily on mangrove flowers. From these field studies it was soon evident that most species of mosquitoes feed heavily, especially as young adults, on a great variety of flowers. Now this study has been brought into the laboratory where biochemical methods are yielding very valuable facts.

The sugar eaten can be burned up as fuel in flight almost immediately, or it can be stored to a limited extent as glycogen (animal starch). The female, but not the male, can transfer the sugar into huge quantities of fat. Once she has built a large fat reserve,

the female can live for weeks without feeding again. The male, unable to build up such a reserve fuel supply, must find and eat sugar repeatedly, for a few days of starvation and he is dead.

The fact that the male can control its body fat when eating sugar, whereas the female simply gets fatter and fatter, is under investigation. The results could well give clues to means of controlling overweight in man.

The studies are part of a five-year \$78,000 NIH grant to investigate the role of nutrition in egg development. An application is pending which would permit exploration of the fat-synthesis phenomenon in mosquitoes.



### *Egg Development*

The tremendous capacity for reproduction which insects have is one of the main reasons why they are among man's greatest competitors. Some insects accumulate sufficient nutritional reserves during their immature feeding-stages, so that the mature insect has the nutrients essential for egg development without further feeding during adult life. On the other hand, many insects, when they become adults, still must find the necessary nutrients, particularly protein, for egg formation.

In most of Florida's important mosquito species, the female must take a blood meal (a source of protein) to mature her eggs. If larvae hatched from wild eggs are fed an adequate diet, some of the adult females which result will only produce eggs after a blood meal. However, some females reared from this same sample will, within four to five days, develop a small batch of eggs even when they are prevented from getting a blood meal. Such females are called autogenous, or self generating.

From the mosquito's viewpoint, any delay in the hazardous business of locating a host and taking a blood meal enormously increases the risk that the mosquito will die before she can reproduce. Autogeny, therefore, guarantees minimum reproduction. Several aspects of autogeny are under investigation: the physiological mechanisms by which females develop eggs without a blood meal, the higher rate of autogeny in southern Florida, the factors of diet, temperature, etc., which may prevent the expression of autogeny, and ultimately, whether autogeny significantly changes the behavior of these mosquitoes. This latter point would be of importance in

control procedures, if, for example, the autogenous females fail to migrate. Fogging operations in urban areas, which provide relief from biting mosquitoes, may kill only the surplus mosquito production which has migrated out of the marsh and which might, in any case, never return to deposit eggs. Thus, reproduction could at times be left largely to the autogenous form.

Autogeny has many more bearings on the biology of mosquitoes generally. The current intensive study began in 1960 with \$130,000 of NIH research grant funds committed over a five-year period.

## THE COUNTIES

### *Alachua County*

**Child Spacing Study**—Interviews of maternity patients and other patients requesting child spacing information is expected to result in finding out the overall opinions held by a community on this subject. Alachua CHD nurses question patients on why they ask for such information and their knowledge and interest in such a program. To qualify, participants must undergo Pap smears (cancer test) and a physical examination by staff members of University of Florida (U of F) at one of the health department clinics.



### *Broward County*

**Fluoride Program**—A project to determine the amount of tooth decay after giving fluoride drops to children and maternity patients is being carried out by the Broward CHD. The drops, prepared by the Regional Laboratory, Miami, are in quantities to last one month. Containers are returned to the health department for refills, thus assuring that persons used the drops as prescribed and that no overdoses are taken.

Qualifying patients are examined; records made of decayed, missing and filled teeth; and they are advised to have necessary dental work by their dentist. However, if they qualify under the indigent program the work is done for them. Patients are re-examined every 12 months. Sponsoring agencies are the Broward County Dental Society, Pilot Club of Hollywood and Junior Woman's Club of Fort Lauderdale.

## *Dade County*

**Abilities of Retarded Children With Mental Age of Six and One-Half Years**—The value of 32 tests to demonstrate the abilities of 100 retarded children with mental capacities of six and one-half years began early this summer. The one-year project, with a grant of \$3500, is sponsored by the FSBH and the Medical School of University of Miami (U of M). Study groups are chosen from the Developmental Evaluation Clinic and Haven School, Miami, and Sunland Training Centers at Fort Myers and Gainesville.

**Parental Personality Relationships on "Neurotic" and "Acting Out" Symptoms in Children**—Purpose of the study was to test the theory that different characteristics of parents might be the cause resulting in emotionally disturbed children. The sample group consisted of 152 mothers and fathers of male and female child psychiatric outpatients, ranging in age from seven through 13 years old. Results of the one-year project, ending this summer, supported the theory and in addition indicated child symptoms are related to as many factors in fathers as in mothers.

**Test for Amino-Acids**—A study is under way to determine by paper chromatography (absorption in colored layers) the amount of amino-acids (found in proteins chiefly) in mentally retarded patients. Amino-acids in the human system sometimes result in abnormal mental and physical conditions which might be avoided if the acid content could be controlled. Agencies cooperating in the three-month project, financed by \$1200 from the FSBH and the Medical School of U of M, are the Developmental Evaluation Clinic, Miami, and Sunland Training Center, Fort Myers.

**Aerosol Bronchial Lavage in Tuberculosis**—This study compares 24-hour sputum specimens, stomach washings and windpipe washings (scientific term-bronchial lavage) by aerosol technique to diagnose pulmonary (lung) tuberculosis in patients unable to expectorate.

The five-year project ending this fall includes a study of outpatients in the Chest Clinic, Dade County Health Department (DCHD), and inpatients in the Chest Unit, Jackson Memorial Hospital (JMH). Early in the morning after an eight-hour fast the patient's stomach is washed out with sterile distilled water, followed by a tracheal (windpipe) washing. If possible, similar washings are made in the afternoon and again the following morning.



Material obtained, along with sputum, if available, is sent for diagnosis to the FSBH Regional Laboratory, Miami.

Results indicate that tuberculosis germs can be obtained from about 95 per cent of the patients by a nonprofessional using the inexpensive windpipe aerosol technique in contrast to the skilled personnel needed to give stomach washings—not to mention the discomfort endured by patients in the latter method.

This study is financed by a U. S. Public Health Service (USPHS) grant of approximately \$5600 yearly to the U of M School of Medicine.

**Comparison of Three Tests for Determining Fluoride Content in Water**—Comparisons are being made to determine the correctness of the Megregian-Maier, Scott-Sanchez and SPADNS tests of fluoride content of drinking water. Over 30 samples have been examined in the study which began last year. The most accurate will eventually be used in all laboratories. Sponsoring agencies are the FSBH Regional Laboratory, Miami, and the Miami Department of Water and Sewers.

**Children's Tuberculosis Program**—Thirty-three children are observed regularly in the DCHD clinics and will be until they reach 20 years of age, as the result of a successful test of Isoniazid (anti-tuberculosis drug) in preventing tuberculosis meningitis and other complications of the first stages of tuberculosis. Cooperating agencies are the Pediatric Tuberculosis Clinic, the School of Medicine of U of M and USPHS.



**Household Contacts in a Tuberculosis Preventive Program**—Follow-up work on families of diagnosed tuberculosis patients from 1957-59 is continuing through home contacts by the staff of the DCHD. Of 1323 family members interviewed, 390 participate and are given chest X-rays, tuberculin skin tests and medicine for one year. The plan, also conducted throughout the nation, has provided



knowledge of the efficiency of Isoniazid in the prevention of active tuberculosis. The USPHS is cooperating.

**Study of Cells in Lung Illnesses**—Physical changes in persons with lung conditions including cancer, tuberculosis and viral (germ) infections are being observed by the DCHD Tuberculosis Division and the Papanicolaou Cancer Research Institute. Specimens of sputum and urine are collected weekly from clinic patients. Several with discovered lung tumors have benefited by the examination.

**Coordination of Services to Patients with Long-Term Illnesses**—This wide-range program is to demonstrate that rehabilitative needs of persons with chronic diseases can be supplied by purposefully planned and coordinated existing community services. Selected patients with long-term illnesses, before hospital discharge, are being investigated on a medical-social level. The findings, matched against the current programs in the county, could lead to more effective home care and would lessen the burden on hospital and nursing home operators to provide rehabilitative services.

This is a broad cooperative study involving the USPHS. Others participating are: DCHD, Vocational Rehabilitation Service (VRS), County Department of Hospitals, County Department of Public Welfare, County Visiting Nurse Association, School of Medicine of U of M, Dade County Medical Association (DCMA), Rehabilitative Center for Crippled Children and Adults, United Cerebral Palsy Association of Miami, American Cancer Society (Dade County Unit), JMH, Florida Chapter of Arthritis and Rheumatism Foundation and Heart Association of Greater Miami.

**Evaluation of Treatment on Contacts to Infectious Syphilis**—Three hundred and forty patients who are sex contacts of persons with infectious syphilis and who had negative blood tests on first examinations participate in this project. Each receives one of five different forms of treatment. Before treatment and regularly for three months, tests are performed. In addition, physical examinations for primary or secondary syphilis are given every two weeks for three months.

The study began last year and is continuing. Data collected by the DCHD and the FSBH will be compared with information gathered in three similar projects sponsored in other states by the USPHS.

**Muscular Injection for Treating Gonorrhea in Males**—It has been determined that intramuscular treatment with Tetracycline (an antibiotic) is a safe and satisfactory method of treatment for gonorrhea in males. The time required for effective treatment and the use of the drug by patients allergic to penicillin were observed. One hundred patients received 250 mg of Tetracycline with a 12 per cent failure to cure. Another group of equal number was treated with twice the dosage with only six per cent failure rate. No unfavorable reactions to the antibiotic were observed. Pfizer Laboratories donated the drugs used under direction of the DCHD Division of Venereal Disease Control.

**Heart Disease Research**—A study to be concluded this year is to determine the effect of home supervision as compared to hospitalization for recurrent congestive heart failure.

Participating are about 200 medically indigent patients from outpatient clinics at JMH. One hundred are assigned to the study group and 100 to the control group, as nearly equal as possible through selection by age, type and duration of illness. Patients in the study group are visited monthly for six to 12 months by a public health nurse who supervises the patients' diets, home care and medication. The control group has no such nurse visits. However, members of both units receive hospitalization when necessary. Data so far indicate the study group has 400 days less hospitalization than the control group, resulting in great savings in hospital, medical and drug bills. The individual attention given by the nurse in the study group is thought to help patient morale, relationship and response more than the contacts made with a large hospital outpatient service experienced by the control group.

The participating agencies are the DCHD, DCMA and County Welfare Department.

**Sliding Glass Door Accident Study**—For three months this year all glass replacements of sliding glass doors on 130 properties were investigated by sanitarians of DCHD. There were 21 breakages reported. The pilot study, requested by the National Safety Council, resulted in a request from their Study Committee that the project be undertaken nationally and that a model code for sliding glass doors be established. Other sponsors of the continuing project are the glass industries, USPHS and FSBH.

**Oral (by mouth) Poliovirus Vaccines**— Sabin monovalent (a

particular strain) poliovirus vaccine was used to test five consecutive production lots of Types I, II and III in children between ages of six months to 20 months who had no more than two Salk injections. Health department centers in three different geographic areas vaccinated approximately 175 children. Blood samples to determine antibodies and rectal swabs to search for intestinal viruses were taken before vaccination. One month later a second blood specimen was obtained and the second dose of vaccine was given. Approximately one month later, a third and final dose was administered. Findings indicate each of the types are effective as an immunization against polio.

Saban trivalent (particular strain) poliovirus vaccine of another five consecutive production lots was administered on a two-dose basis to children between nine months and 23 months who also had no more than two Salk injections. Blood samples and rectal swabs were obtained from 650 children who participated. Six weeks later each child received a second dose of trivalent vaccine and another blood sample was obtained to determine antibodies. Three weeks later another blood sample was secured to show antibody response against polio. The trivalent vaccine is still being evaluated. Cooperating agencies were FSBH Regional Laboratory, Miami, DCHD and the School of Medicine of U of M.



**Sampling of Sewage to Determine What Enteroviruses Are Present in the Community**—Another survey connected closely with the oral polio vaccine studies is to determine amount and kinds of polio and other intestinal viruses in the sewerage systems in Dade County before, during and after the Cox-Lederle trivalent oral polio field trials in 1960. Sewage sampling findings are compared with rectal swabs made by Enterovirus Surveillance Unit, Communicable Disease Center, USPHS, Atlanta. In February 1960 the DCHD Division of Sanitation began weekly samplings of 10 representative sewerage systems. This was shortly before 400,000 residents under 40 years of age received a single dose of the vaccine. Several strains of poliovirus were found in sewage samples

during the field trial which ran from February through April 1960. However, no other polioviruses were discovered until October 1961 and then only a single one of a particular type (Type II). Examination of the rectal swabs during this time produced the same type virus (Type II), indicating the virus was prevalent. In April-June 1962 six other strains of Type II were recovered in sewage samples but because Sabin oral polio vaccines were being given at the same period, it is possible these viruses were from that vaccine. Other enteroviruses were found throughout 1960-62 with most of them showing up in the summer months. In general, the sewage and rectal swab samplings agree.

This study is financed by a USPHS grant of approximately \$23,000 yearly to the School of Medicine, U of M. The project began in 1961 and will continue until 1964 with the assistance of the FSBH Regional Laboratory, Miami, and the DCHD.

**Reaction to Different Infectious Diarrheas and Evaluation of Treatment Measures**—Attempts are being made to explain the growth patterns of bacteria and parasites and determine treatment for acute and chronic diarrheas. About 40 patients a year are being chosen for major studies at JMH during the next three years. Tissues and stool specimens are being examined. Bacteriological and virological work is being done at the FSBH Regional Laboratory, Miami, and the study of parasites is under way at the cooperating U of M. The study is financed by the Commission on Enteric Infections of the Armed Forces Epidemiological Board.

**Viruses in the Intestines and Tissues of Humans Dying with Diarrheal Disease**—This study is to determine whether certain factors (bacteria, fungi, protozoa-invisible one-cell creatures), helminths (worms), viruses and nutrition either alone or combined cause fatal diarrheal disease.

Autopsy tissue and intestinal contents from 63 fatalities in Guatemalan children during certain periods from 1958 to 1960 were examined by the FSBH Regional Laboratory, Miami. Also brought to this country were rectal swabs and serum specimens from non-fatal diarrheal cases and healthy persons of the same age group. Comparison will be made with other studies conducted at the Institute of Nutrition of Central America and Panama and the Department of Pathology of Harvard Medical School.

This study is also financed by the Commission on Enteric In-



fections with a \$13,500 grant. Also assisting in the project is Roosevelt Hospital, Guatemala City.



### *Duval County*

**Home Nursing Care for the Chronically Ill**—A project is under way to get the chronically ill out of hospitals sooner and provide home nursing care, resulting in decreased illness expenses and giving patients a "morale" booster. If the plan is successful, it might be adopted throughout the state.

Case histories are gathered by 15 staff members of the Duval Visiting Nurses Association from patients at Duval Medical Center. From the hundreds investigated so far indications are that most of the patients for this study have chronic diseases such as heart, cancer or diabetes and are in an older age group. The home care program includes increasing the patient's activities gradually, helping him bathe, supervising his diet, changing surgical dressings and either giving or teaching someone to give injections.

This project is financed by federal funds to the FSBH. An assisting agency is the Duval CHD.



### *Escambia and Orange Counties*

**Testing of Killed Measles Vaccine**—This study is to determine if killed measles vaccine injections are an effective immunization agent against measles. One hundred and sixty-three Escambia County children from six months to six years received killed virus measles vaccine this past summer. Blood specimens to determine immunity levels were taken from the youngsters, none of whom had any history of measles. Three injections were given. Four months later blood specimens were collected again. Pfizer Laboratories donated the vaccine for the project.

Eight hundred and fifty children from kindergarten and nursery schools in Orange County were immunized. Blood samples were taken before and after vaccine. A continued watch will be kept on the boys and girls to determine how effective the vaccine is. Win-



throp Laboratories and U. S. Children's Bureau funds financed the program.



### *Escambia County*

**Asymptomatic Bacteriuria**—A study in Escambia County is being made of the relationship between asymptomatic bacteriuria (lack of bacteria in the urine) to later development of pyelonephritis (inflammation of the kidney and its pelvis) and hypertension (high blood pressure) in prenatal and postpartum patients. Urine specimens collected from patients reporting at the prenatal clinic of Escambia CHD were examined by the FSBH Regional Laboratory, Pensacola. Results are now being compared with the prenatal and postpartum histories of the mothers and the weights of their babies.



### *Hardee County*

**Community Organization for Mass Chest X-ray Surveys**—This study is to provide substantiating information of particular methods to secure greater public participation in mass chest X-ray surveys. It is hoped the project will show a significant increase of participation over the most recent mass chest X-ray survey conducted in the county.

Health leaders in Wauchula are contacted and urged to provide locations for the mobile X-ray unit, suggest the hours for operating the unit and the best means of publicizing the advantages of chest X-rays. A similar plan was completed in Jefferson County last year and the Hardee study is hoped to back up the successful findings of that effort.

Cooperating agencies are FSBH, Florida Tuberculosis and Health Association (FTHA), Hardee County chapter and the CHD.



### *Hillsborough County*

**Oral (by mouth) Poliovirus Vaccine**—Early this year a four-month program was begun to eradicate poliomyelitis by feeding those under 40 years of age two doses of Lederle-Sabin oral trivalent vaccine at an interval of eight weeks.

Sponsors of the communitywide campaign were the Hillsborough CHD, the Hillsborough County Medical Association, and the FSBH. The objective of the program was saturation of the entire population of 250,000 under 40 years of age with special emphasis on preschool children in low-income families.

During the first seven-day feeding period in February, 178,000 received the vaccine. Eight weeks later the second dose was offered and 196,000 were fed. Among those below the age of five years, 55 per cent were fed during the first period and 62 per cent during the second.

Serum samples were collected from 1500 preschool children to determine antibody conversion after vaccination. Other scientific studies include extensive surveillance for associated neurological illness (none has been observed), collection of sewage and rectal swabs to measure community enterovirus excretion patterns, and research in behavior patterns to determine factors related to community and individual acceptance of the oral vaccine.

Over \$65,000 from Lederle Laboratories and FSBH was obtained to supplement local resources to finance the program.

The latter study will investigate the influence of cultural, social and psychological factors on acceptance of poliomyelitis vaccine. A similar study was completed in Dade County in 1959 and published by the FSBH in monograph form titled, "The Epidemiology of Polio Vaccine Acceptance." This year the study was repeated in Hillsborough County to determine acceptance of the injected and oral vaccines. All persons between 20 and 30 years of age residing in selected areas were interviewed. Half of the individuals were interviewed before the trial vaccine period and then questioned again after the second vaccine "feeding." Then, the balance of the interviewees was questioned for the first time. A refusal rate of less than five per cent was obtained in each interview study. FSBH's Bureau of Mental Health carried out this investigation.

**Research in Occupational Health**—This is a plan to define and incorporate into the CHD a practical method to prove and present occupational health problems to the public. Working people will be shown how to use available health facilities to improve their health and increase their production. Medical groups, labor representatives, persons from industry, statisticians, sociologists and psychologists will participate. Consultative services are being provided by

the USPHS, FSBH, Universities of Pittsburgh, South Florida and North Carolina. The USPHS and FSBH are cooperating in the program under a \$110,000 two-year contract.



### *Hillsborough and Duval Counties*

**Rehabilitation of Discharged Mental Hospital Patients**—This program compares the adjustment of released mental hospital patients through the work of combined community services against the adjustment made by patients returned to an area where no coordinated plan exists. One representative from each of 33 Hillsborough County agencies form the Mental Health Resource Council which hopes to learn what aids or retards rehabilitation and to prevent patients from having to be returned to institutions. Two hundred and sixty-nine patients are being investigated, 147 in Hillsborough and 122 in Duval County, the control area where no such program exists. Patients are questioned about what their attitudes are toward employment, employers, economic adjustment, social and family life, living arrangements and number of dependents one year before hospitalization and a year afterwards. Organizations and persons involved in the patient's rehabilitation are investigated also. The project began in 1959 with a National Institute of Mental Health grant of \$34,000 under guidance of the respective CHDs and the FSBH. Consultants are provided from the U of F and the Department of Sociology of Florida State University (FSU).



### *Hillsborough, Orange and Palm Beach Counties*

**Newborn Immunization Program**—The above three counties are determining the best method to immunize children under one year of age by using birth certificates to initiate follow-up for checking purposes. Mothers are contacted when the child is 10 to 12 weeks old and urged to contact private physicians or, if they qualify for indigent services, the CHDs.

Birth certificates are processed at the FSBH's Data Processing Unit which mails cards to mothers of children in Hillsborough and Orange Counties. Palm Beach CHD is using its own local cleri-

cal services for this purpose. Follow-up post cards, telephone calls and visits by public health nurses are made on recipients who do not reply. The effectiveness and cost of the program will be measured against the goal of getting 90 to 100 per cent of the children under one year of age immunized against the four basic diseases—diphtheria, tetanus, whooping cough and polio.



### *Palm Beach County*

**Accident Study**—A study of the types and frequency of accidents occurring to Palm Beach CHD employees and their families is under way this year. Seventy-six health department employees with over 200 members in their families are requested to report accidents experienced by themselves, their family members or house guests. One part of the campaign by the Health Department Safety Committee stressing automobile safety seat belts resulted in over half of the department's employees equipping their family vehicles with belts supplied by a local department store at reduced prices. Cooperating in the program is the FSBH accident prevention staff.

**Maternity Care for Negro Migrant and Non-migrant Women**—Comparison studies are being conducted on migrant farm labor mothers and non-migrant mothers of similar socio-cultural levels, in regard to prenatal and postpartum care. One hundred and seventy-two migrant and 145 non-migrant women who were delivered in the Belle Glade Community Hospital were interviewed regarding prenatal care. Two months later they were questioned again regarding medical services since hospital discharge. So far, findings indicate no great differences between the two groups. Agencies planning health programs in the area will use the survey findings to provide better services.

**Migrant Health Project**—From 1954 to 1955 the first health study on agricultural migrants was an examination of about 150 households under the direction of one labor contractor. The second project was to adapt health services to the social and cultural characteristics of agricultural migrants. The third phase from 1956 to 1961 was to extend health services to migrants through health departments in the counties where most of the workers are located.



Evaluation is being made on the effectiveness of work of physicians, public health nurses, dentists, medical social workers, nutritionists and a liaison worker. The two previous studies obtained information on life patterns, health problems, reasons for refusal of available health facilities and program deficiencies. Cooperating agencies are the Palm Beach CHD, U. S. Children's Bureau and the FSBH.

**Oral (by mouth) Poliovirus Vaccines**—The Sabin trivalent oral poliomyelitis vaccine was fed to 110 unimmunized children, ages 10 weeks to five years, at eight-week intervals. Blood specimens and rectal swabs were taken as in Dade and Hillsborough Counties. Pfizer Laboratories provided the materials. Staff members of the Palm Beach CHD made the contacts. The project ended this fall.



### *Pinellas County*

**Accident Study**—A study has begun on accident control and prevention with the major emphasis on investigation and study of accidents to older people. Data on cause, distribution and type of accidents peculiar to older people will be analyzed. It is hoped that interpretation of the accumulated information can result in educational programs for the prevention of accidents. Pinellas was chosen for the project because of the large concentration of elderly persons and a Research Division of the CHD which is currently interested in problems of public health needs of the aged. Cooperating are the FSBH accident prevention personnel and the USPHS.

**A Comprehensive Public Health Program for the Aged**—The identification of unmet health needs in older people has been the primary objective of a research project begun by the Research Division of the Pinellas CHD in 1958. The findings of the project, which consists of four studies (described below), are now being used to plan public health programs for the aged in the county in cooperation with other health and welfare organizations. Rigorous evaluation will be done to determine if these programs satisfactorily achieve their objectives.

The major undertaking of three years was a "Health Study of Older People." A representative sample of 2544 persons 65 years



of age and older was interviewed regarding their living arrangements, symptoms, diagnoses, disabilities, use of physicians, hospitals, nursing homes and other health services and facilities. The findings from this study are presently being used to initiate programs for the aged. Additional data will be used to explore with lay and professional groups the need for other community health programs in a series of conferences to be conducted in the coming months.

Two smaller studies were conducted to determine the need for homemaker services in the county in cooperation with the State Department of Public Welfare, and the Visiting Nurse Associations of St. Petersburg and Upper Pinellas County. During a one-month period in 1960 social workers and public health nurses completed 1163 interviews regarding health and welfare problems. The knowledge gained from these studies is being used in cooperation with the Community Welfare Council of St. Petersburg to promote the establishment of a homemaker service.

The fourth study involved the records of 219 persons residing in nursing homes within the county during the summer of 1960. The purpose of the study was to determine the extent and kind of medical care being received, and the kind, type and adequacy of records being kept in nursing homes. The results of this study are being incorporated into the regular nursing home program of the health department.

This series of studies, financed in part by a grant from NIH, will be completed in 1964.

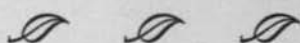
**Evaluation of the Sterneedle Technique versus the Mantoux Test**—A study to determine whether the Sterneedle or Mantoux Test is the most efficient for tuberculin skin testing. Conclusions drawn are that the Sterneedle is a good method in the hands of someone familiar with the technique but entirely unsatisfactory when done by inexperienced personnel who frequently have to be used in tuberculin testing programs. Factors which influenced the judgment of the tests were the improper application of testing material, improper placement of and the premature triggering of the Sterneedle.

The project was instituted after a case of tuberculosis was found in a Negro elementary school where 821 students from seven through 14 years in grades one through six were enrolled. Over 700 were tested and reactors to one or both methods totaled 43.

Follow-up consisted of tuberculin testing by the Mantoux method of all household contacts. Positive reactors were X-rayed. No new cases of tuberculosis were uncovered.

**Study of Extrahospital Nursing Needs in a Retirement Area—**The objective of this study is to measure in a systematic manner the nature and magnitude of total extrahospital nursing needs in a county with a high proportion (24.9 per cent) of persons 65 years and over. Extrahospital nursing needs may be met by public health, visiting or industrial nurses. This project will duplicate a similar study in Pennsylvania to test its usefulness as a means of obtaining data to permit generalization applicable to defined segments of population for specified conditions. The two-year project began this summer with a budget of \$84,917 from the USPHS under a Community Health Services Project grant. Cooperating agencies are Nursing and Research Divisions of Pinellas CHD, Visiting Nurse Association in Pinellas County and the FSBH.

### *Polk County*



**Glaucoma (disease causing poor vision or blindness)—**The purpose of the project is to establish screening centers in Florida to search out persons in the early stages of glaucoma and with other sight problems so that corrective treatment can be started. Encouragement will be given to professional medical personnel to include techniques of ophthalmological (structure, function and diseases of the eye) examinations in routine physical examinations.



The first screening center was established at Lakeland General Hospital early this year. In four months 3226 persons were examined by ophthalmologists and 36 men and 52 women ranging in ages from 40 to over 85 were found to have some form of eye disorders indicating early glaucoma or other sight problems which might be corrected. Polk CHD personnel assisted with the examination.

**Research in Radiological Health—**Bartow is presently the cen-

ter for a study to determine whether radiation exposure in the ordinary course of physical examinations may be greater than necessary and possibly injurious. The dosage of diagnostic X-ray machine and the improvements and development of radiological health consultation service to medical and allied professionals will be compared with that gathered in other counties and states. Bartow was selected because of its concentrated population, agricultural and industrial pursuits, central and cultural position in the state and interest of local officials. USPHS supplies \$20,000 annually for this study.

## FLORIDA STATE BOARD OF HEALTH

**Airborne Pollen**—A study began in 1960 to determine the types and extent of airborne pollen in selected areas is drawing to a close this year. There are 25 pollen collecting stations in the state and samples are sent for examination to the FSBH Central Laboratory, Jacksonville. The FTHA finances the study while the FSBH provides pollen shelters, slides and laboratory personnel. Each month CHDs receive reports of pollen findings. Eventually it is hoped complete listings by seasons for each type of pollen, including the time of peak pollen count, can be released regularly. This will be valuable information to prospective visitors and residents of Florida who suffer from asthma, hay fever and like conditions.

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**Unclassified Mycobacteria Project**—Beginning in 1955 systematic studies have been conducted on a statewide basis on the problem of tuberculosis-like bacteria that seem to produce pulmonary (lung) disease which is indistinguishable from tuberculosis. NIH funds of \$31,000 a year support this combined clinical, epidemiological and laboratory study. The bacteria are found widely throughout the state. One of the more significant findings include the demonstration that they are often in healthy persons but produce no disease whatsoever. They can be found, too, in the soil and water, on vegetables and other aspects of the environment. Although the disease symptoms associated with them are rare, it can produce a variety of illnesses, some of which involve the skin, bones and kidneys as well as the lungs. The major purpose of the research has been

to determine whether these bacteria are transmitted from person to person, and the tentative conclusion has been that they are not.



**Rapid Identification of Group A Streptococcus—Heart Disease Control Program**—One of the important causes of rheumatic heart disease and nephritis is prior infection by Group A streptococcus organisms. Fortunately, penicillin and other antibiotics are effective in clearing the body of the streptococcal infection before any damage is done to the heart. It is essential, however, for the doctor to know that he is dealing with a Group A streptococcus infection.

Recently, a new technique using "fluorescent antibodies" was shown to be useful in the rapid identification of Group A streptococci. The test can be performed in six to 18 hours instead of several days that it has taken in the past. However, before the new test can be used alone, additional research and training is needed to prove its effectiveness. It is desirable also to provide training for bacteriologists in hospital laboratories so that they can use this method.

There are many problems that need to be worked out before the test procedure can be depended on. The test calls for examining specimen taken from the throat of an infected individual. If the streptococci are present, a fluoresceine dye is used on the culture (growth). When ultraviolet light is applied, and if Group A streptococci are present, the bacteria will "glow" in a characteristic manner. Several thousand cultures have been tested by the fluorescent antibody test and the technique has been introduced in several hospitals and other medical laboratories in Florida. Two workshops were conducted during the past two years to provide training in the procedure to 20 trained bacteriologists.

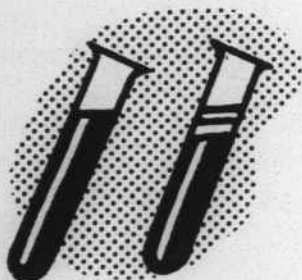
The project, initiated in 1960, is being carried on a continuing basis with federal funds.

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**Nursing Home Accidents** — A one-year study determining the number and kinds of accidents occurring to residents and employees



in a selected group of nursing homes ended this year. Three hundred nursing homes providing 2100 beds and staffed with 1000 employees participated. Fifty-four of the nursing homes reported their residents sustained 101 accidents, 100 of which were falls with varying physical injuries and included one death. Employees had half the number of accidents of the residents and the injuries were less serious. These included falls, cuts, burns, etc. It is hoped that the findings will result in adjustment in insurance premiums, provide new information for formulating nursing home regulations and give more material for accident prevention programs in nursing home operations.



**Rabies in Wildlife**—This project is to learn more about and possibly reduce the amount of rabies in wildlife. Vaccination and organized control efforts have reduced rabies in dogs but in the last ten years the majority of reported cases have been in bats, raccoons and other wild animals. Control of rabies in these latter animals is naturally difficult. One phase of the study is to find out how important bats are in the transmission of the rabies virus. Also, are there any other animals equally susceptible to it? Squirrels, house cats and some small animals may eat paralyzed bats or investigate them. How much of a hazard to humans does this present? Improvements in control of wildlife epidemics and better treatment of humans for wild animal bites have resulted from the studies. The program is financed by a NIH grant of \$20,000 annually since 1954 and the FSBH Central Laboratory assists in the project.

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**Rehabilitation of Treated Alcoholics**—A preliminary study is under way to learn the types or combinations of treatment most effective in aiding rehabilitation of alcoholics. Follow-up programs have been maintained for two years on 250 patients treated at the



Florida Alcoholic Rehabilitation Center (ARC), Avon Park, and assistance has been given patients in working out problems of employment, family and community relationships and drinking habits. One outgrowth of the survey is the rehabilitative work now being done by the Florida Alcoholic Rehabilitation Program (ARP) and the VRS of the State Department of Education. Funds for the original project came from VRS and the FSBH.

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**Nonhospitalized Tuberculosis Patient Study**—Nearly 90 per cent of 1338 persons, who had active infectious tuberculosis in 1961 but were not hospitalized, have been investigated to determine their individual status. Data were collected by a representative of the FTHA who interviewed physicians or local health personnel responsible for follow-up and treatment of the patients. Analysis is still under way on the individual's current infection with tuberculosis, cooperation in treatment and personality. Observations were also made on those they may have infected and the responsibilities of the health departments and/or private physicians in providing outpatient care and follow-up. The study is financed by the FTHA with the cooperation of the J. Hillis Miller Health Center, College of Medicine and Department of Sociology and Anthropology at U of F and the FSBH.

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**Community Cancer Project for ADC Recipients**—The purpose of the study which runs another year is to examine mothers who are Aid to Dependent Children (ADC) recipients. They are given Pap smears to determine if they have cervical cancer. The project, begun in 1960, is the first in the nation conducted on such a wide scale. The plan is to demonstrate that large numbers of women should be examined and have follow-up treatment since cervical cancer is 100 per cent curable in its early stages. It is hoped the plan will result in a saving of the lives of mothers at the age of their greatest community value in caring for their children. It is pointed out that Pap smears included in regular physical examinations are practical and beneficial to the public and private physicians. Twelve counties have been covered in the past two-year survey and with the aid of CHDs, welfare groups and other professional groups it is hoped to include the other 55 counties.

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**Cholinesterase Test**—This is a survey to determine the cholines-

terase (certain chemical properties absorbed by persons exposed to insecticides). This one-year project consists of monthly blood specimens taken from volunteer employers and employees of Martin County flower farms. Nearly 25 specimens a week are processed at the FSBH Central Laboratory, Jacksonville. Blood specimens from a similar number of non-flower workers are being used for comparison.

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**Snake-Bite Registry**—A snake bite registry was established in Florida this year at the suggestion of an Orlando orthopedic surgeon and an instructor in the College of Medicine at the U of F. One hundred and seventy Florida hospitals were asked to fill out information cards on all snake bites treated by their staffs. At the end of the first six months a third of the hospitals reported 100 bites treated. About 35 per cent of these were by rattlesnakes; 25 per cent, copperheads and moccasins; 3 per cent, coral snakes and the remainder unidentified.

Assisted by a committee from the Florida Medical Association (FMA), the investigators hope to evaluate the treatment and prevent some of the consequences which have included amputations of an arm or a leg because of multiple bites. The FSBH accident prevention program personnel secure follow-up material by mail from individuals treated to determine circumstances of the bites with the hope that information on snake bite prevention can be made available to the public.

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**Kellogg Studies in Administrative Research** — This five-year project is to improve public health administration by experimental studies, long range plans for development of all FSBH programs and the application of findings to further programing. The first activity began in 1959 when every program director supplied a description of his current operations, objectives, five to ten year expansion plan and suggestions for evaluating progress. Thirty-five programs were identified and have been reviewed and rewritten. Review every two years of the plans is now a part of the method by which the FSBH operating funds are allocated.

Evaluation of local level plans began with the school health programs because of their close relationship to the total health department programs. Migrant projects were studied next, then prenatal clinics in 30 counties comprising 67 per cent of the state's population. Conclusions drawn from these projects along with the

mass polio immunization, comparison of health education methods, nursing programs, etc., are expected to be adapted to statewide use where applicable.

**Organization and Initiation of Public Health Research**—This project is funded by a \$45,920 NIH grant with the main purpose to provide funds to begin research projects in state and local health departments. Use of the funds varies and has included salaries for research personnel in CHDs, funds for part-time workers in study projects and employment of consultants for preparation of research proposals.



**Training for Research in State and Local Health Departments**—This is a training grant from NIH to prepare personnel for research activities in state and CHDs. The program supports training at several different levels including for those persons just out of undergraduate school or medical school, those who have had some period of service but who need more field experience in research activity in CHDs and those attending graduate school for further academic training. These funds have been used to support six individuals, two of whom have already returned to full-time research activities in the FSBH.

#### **FLORIDA COUNCIL ON TRAINING AND RESEARCH IN MENTAL HEALTH**

**Alcoholic Program in a Local Health Department**—This is a demonstration program to reduce alcoholism by using the resources of the Sarasota CHD under which the program operates. Education, a better defined program, development of community outpatient clinics, local and state aids, etc., will be studied. The ARP and the CHD have cooperated with training programs sponsored by Yale Summer School of Alcohol Studies, Southeastern Regional School of Alcohol Studies and the U of F.

**Behavioral Classification Project**—A study to develop a practical set of terms for behavioral problems of children to supplement

the presently inadequate psychiatric nomenclature (names). It is generally realized that the present guidance clinics do not provide adequate measurement of children's emotional problems to guide the treatment, consultation and educational activities. If more definitive classifications of disorders can be made more help can be given. Sponsors are the FSBH, affiliated Child Guidance Clinics and the Department of Psychology of Jacksonville University.

**Effect of Imprisonment on Family**—A study is under way by the Department of Social Welfare of FSU to measure effects of imprisonment of the father upon the remaining household members. Data will be used by social and mental health workers, psychiatrists and probational personnel to better solve the problems presented.

**Psychiatric (mental) Consequences of Gynecological Surgery**—This is a study at the Obstetrical and Psychiatric Departments of the College of Medicine, U of F, to analyze the relationship between personality types and the occurrence of depression or peptic ulcers in women following the removal of reproductive organs.

**Relation of Parental Authority to Child's Emotional Illness**—This Department of Psychiatry study at the U of F is on the relationship between rigid parental attitudes and emotional disorders of children. Analyses are made between attitudes of parents in a sampling of children at a treatment clinic and attitudes of parents of "normal" children who are admitted to other hospital clinics.

**Separating Sexes in Elementary Grade School**—This project is carried on in one elementary school in Jacksonville to determine what effect the separating of the sexes has on achievement (learning) levels and general behavior problems.

With such a large number of research projects, studies and demonstrations to describe, it is obvious that only a limited amount of space could be devoted to each. If you desire more information on a selected subject, please address your inquiry to: Coordinator of Research and Training, Florida State Board of Health, P. O. Box 210, Jacksonville 1, Florida.



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